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ABSTRACT

This is the teacher's manual to accompany part 1 of the workbook for grade 1 pupils in the Comprehensive Instructional Management System, a teacher-designed unified mathematics curriculum for kindergarten through grade 7. It is composed of a curriculum, a testing component, and a computer-managed reporting system. The curriculum is organized into modules of similar skills or understandings from 14 topics. Each module has: a suggested period of duration for student mastery; a listing of new skills to be mastered by the student in the form of performance objectives; a section devoted to vocabulary, terms, and symbols; getting-started activities on prerequisite skills in preparation for undertaking new objectives; strategies for teaching the new skills; and student activities for providing reinforcement for the newly learned objective. After the sequence of modules and content by topic are displayed, teaching suggestions for 72 modules on 105 performance objectives are given. The content is from the topics of: numbers and numeration; addition; subtraction; fractions; geometry; measurement; algebraic concepts; graphs, probability, and statistics; and problem solving. Pages from the student's workbook are interspersed with the suggested activities. (MNS)

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CIMS

COMPREHENSIVE INSTRUCTIONAL MANAGEMENT SYSTEM

A Cyclical Mathematics Curriculum

PART 1—TEACHER

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FOREWORD

The Comprehensive Instructional Management System (CIMS) is a unified mathematics curriculum for grades K-7. The curriculum is cyclical in design, and reflects the most recent New York City and New York State guidelines.

Utilizing the experience of our system's teachers, we have developed a teacher-designed curriculum that includes a rich selection of classroom-tested successful mathematics activities. The major goal of the CIMS mathematics project is to provide the classroom teacher with a well-structured, objective-based curriculum. All objectives are supported by a variety of strategies. Student mastery of these objectives is readily diagnosed through the system's testing component.

The curriculum format is structured to allow the teacher to determine the ability level of the students in the topic under study, and to permit the students to move forward at their individual rates. Each module of instruction provides the teacher with a set of related performance objectives. These objectives are supported by activities which probe and develop the students' readiness to undertake new skills and concepts. Further reinforcement is given to mastery of the objectives through accompanying student workbooks.

It is hoped that this curriculum will not only assist teachers in developing vital mathematics instruction, but will serve to expand and enrich students' mathematics skills.

Charlotte Frank

Charlotte Frank,
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The Comprehensive Instructional Management System (CIMS) was developed as a project of the Division of Curriculum and Instruction, Charlotte Frank, Executive Director. Dr. Peter Negroni, Community School Superintendent CSD 12; Dr. Harvey Garner, Community School Superintendent CSD 18; Carlos Edwards, Community School Superintendent CSD 23, and Joseph Pacheco, Community School Superintendent CSD 32 supervised the overall development of the CIMS program within their respective districts.

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INTRODUCTION

The Comprehensive Instructional Management System (CIMS) is a teacher-designed educational delivery system composed of a curriculum, a testing component and a computer managed reporting system.

Designed to support mathematics instruction in the classroom, CIMS provides a comprehensive cyclical mathematics curriculum for grades K through 7. Each manual describes the curriculum for a single level or grade. Teacher curriculum developers from elementary, intermediate and senior high schools utilized the most current New York City and New York State guidelines in formulating the curriculum's modules and sequence.

Curriculum Topics

The CIMS mathematics curriculum has been organized into the following 14 topics:

.01	Numbers and Numeration
.02	Addition of Whole Numbers
.03	Subtraction of Whole Numbers
.04	Multiplication of Whole Numbers
.05	Division of Whole numbers
.06	Fractions
.07	Decimals
.08	Integers
.09	Geometry
.10	Measurement
.11	Algebraic Concepts
.12	Graphs, Probability, Statistics
.13	Problem Solving
.14	Review

Modules of Instruction

The CIMS curriculum is organized into modules or groupings of similar skills or understandings. Each module has a suggested period of duration for student mastery, a listing of new skills to be mastered by the student in the form of performance objectives, a section devoted to vocabulary, terms and symbols, getting started activities which serve as prerequisite skills in preparation for undertaking new objectives, strategies for teaching the new skills and student activities for providing reinforcement for the newly learned objective. Note that the lesson duration is included only as a guideline to the teacher for planning purposes. The actual time required for each module will vary from class to class and from child to child depending on the needs of the students and the teacher's judgment.

Priorities of Performance Objectives

There is an order of priority to be recognized in teaching the content presented in the CIMS NEW YORK CITY MATHEMATICS CURRICULUM. Performance objectives with the greatest priority are so basic that unless the student acquires a satisfactory degree of competency in them, the student cannot progress. Such topics are marked A and mastery by all pupils is essential.

Performance objectives marked B are required to be presented to all students. Mastery is not expected at this time. These objectives will be developed further and reinforced later.

Performance objectives marked C are of special interest. These should be taught to increase positive attitudes towards mathematics.

Summary: A - Mastery of this objective is essential for progress. Opportunities for reinforcement should be provided throughout the school year.

B - These objectives are to be taught to all pupils. Mastery is not essential at this time because the topics will be further developed and reinforced.

C - Objectives of special interest.

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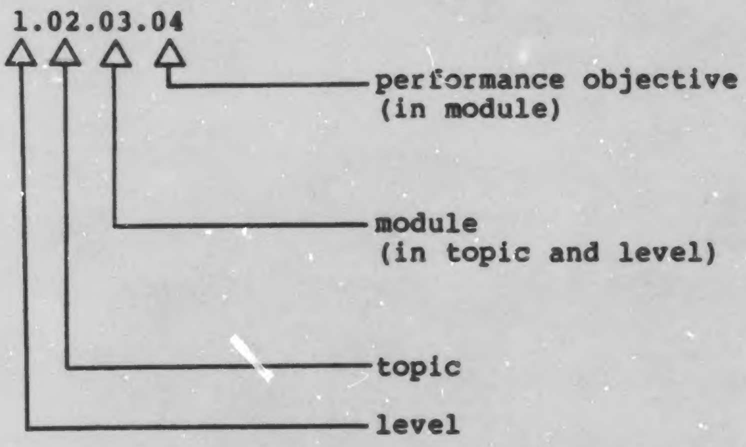
Topic Tab Key

01. Numbers and Numeration
02. Addition of Whole Numbers
03. Subtraction of Whole Numbers
04. Multiplication of Whole Numbers
05. Division of Whole Numbers
06. Fractions
07. Decimals
08. Integers
09. Geometry
10. Measurement
11. Algebraic Concepts
12. Graphs, Probability, Statistics
13. Problem Solving
14. Review

Module Coding Key


1.02.03.04
performance objective (in module)
module (in topic and level)
topic
level

INSTRUCTIONAL SEQUENCE DESCRIPTION

An instructional sequence is given in list form on the following pages for this level. Each module in the list is described by its unit number, module number, title, and page location.

The sequence has been arranged to reflect what is considered the most effective presentation of the mathematics curriculum.

INSTRUCTIONAL SEQUENCE - LEVEL 1

TEST NUMBER	UNIT NUMBER	MODULE NUMBER	TITLE	PAGE NUMBER
	1	1.01.01	Spatial relationships	2
	2	1.10.01	Seasons of the year	3
	3	1.10.02	Days of the week	4
	4	1.01.02	Spatial relationships extended	6
	5	1.01.03	Classification by attributes	8
	6	1.01.04	One-to-one and more than one correspondence	9
	7	1.01.05	Sets	10
	8	1.01.06	Compare groups of 1 through 5 objects	12
	9	1.01.07	Quantities	14
	10	1.01.08	Numerals one (1) through five (5)	16
	11	1.09.01	Patterns	17
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	13	1.10.03	Measurement of length - non-standard	19
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	18	1.10.07	Pennies and nickels	24
	19	1.10.08	Measurement - capacity	25
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	21	1.10.10	Temperature - Centigrade	27
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	24	1.13.03	Use tables to develop questioning skills	30
	25	1.02.01	Identify the plus (+) symbol and the equal symbol	31

INSTRUCTIONAL SEQUENCE - LEVEL 1

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1.01.02 Spatial relationships extended............... 6
1.01.03 Classification by attributes................. 8
1.01.04 One-to-one and more than one corespondence... 9
1.01.05 Sets.. 10
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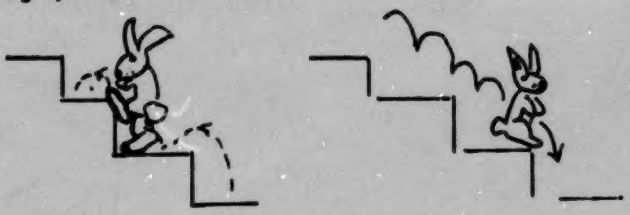
1.01.01 SPATIAL RELATIONSHIPS

(1 lesson - ongoing)

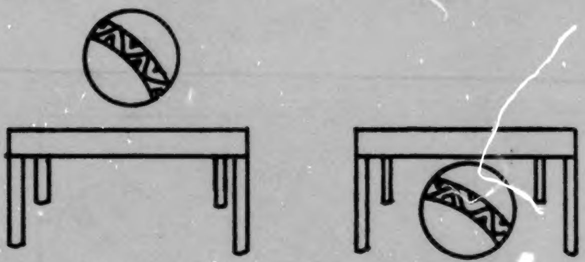
PERFORMANCE OBJECTIVES

The student will be able to...

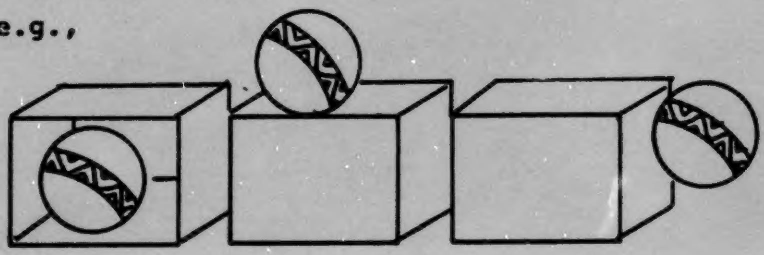
1.01.01.01A distinguish between up and down; e.g.,



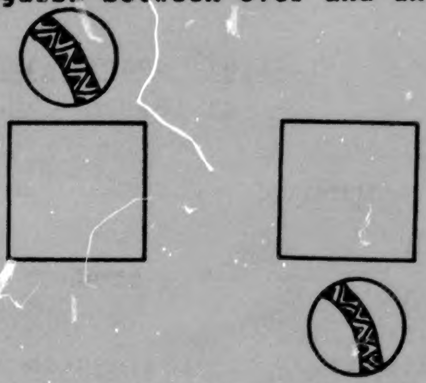
1.01.01.02A distinguish between above and below; e.g.,



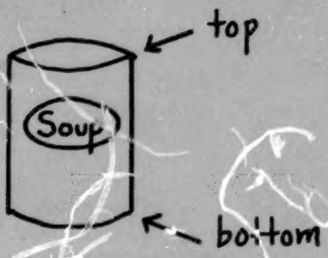
1.01.01.03A distinguish among in, on and off; e.g.,



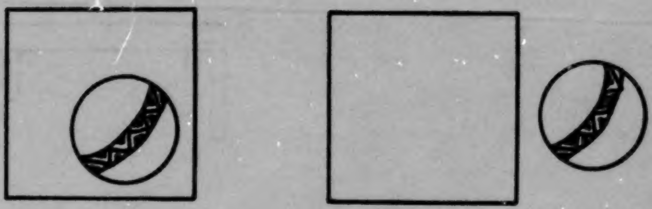
1.01.01.04A distinguish between over and under; e.g.,



1.01.01.05A distinguish between top and bottom; e.g.,



1.01.01.06A distinguish between inside and outside. e.g.,



1.01.01

VOCABULARY

TERMS

up
down
above
below
in
on
off
over
under
top
bottom
inside
outside

GETTING STARTED

Ask the students to sing the following song. Use the tune of "Put Your Finger in the Air."

Put your finger on your nose, on your nose,
Now bend down and touch your toes, touch your toes
Now let's all jump up and down
Touch your chin and turn around
Put your arms above your head
Join them way below instead
Now let's all jump up and down, up and down,
Touch your hips and turn around, turn around
Oh, let's walk inside the line
Turn and walk outside this time
Now let's all jump up and down
Touch your knees and turn around.

Read "Three Billy Goats Gruff". Stress words related to the concept of location, e.g., over the bridge, under the bridge; down in the water; on the other side... Ask several students to dramatize the story using chairs as a make-believe bridge. An experience chart story may be developed retelling the sequence of events and using location words to reinforce comprehension.

1.01.01

1.01.01.01 distinguish between up and down

STRATEGY 1: Prepare and display pictures of the sky, the land and pictures of rockets. Distribute pictures of rockets to each student.

Say, "The sky is up. It is above our reach. The land is down, we can touch it."

Tell the students a story about space travel. Place the rocket on the land. Say, "Where is the rocket now? Where will it go after blast-off?" (up)

Ask a student to come to the chalkboard and demonstrate the rocket going up in the air while the other students do the same at their seats. As the rocket is going up, ask the class to say, "Up, up, up... blast off!"

Say, "Our rocket is now up in the air. Let's bring it down. Let's say, "Down, down, down," because our rocket is coming back to the land. Let's clap for all the astronauts!"

STRATEGY 2: Say, "Look around the classroom. Things that are above our reach are up. Things that are below our heads are down. Can you find some objects in the classroom which are up? (List the items on the chalkboard or sketch them.) Can you find some items which are down?" List the items on the chalkboard. e.g.,

Our Classroom

Things Which Are Up	Things Which Are Down
flag	floor
alphabet chart	chairs
lights	desk legs
	garbage pail

Ask the students to use these words in sentences stating whether objects are located up or down in the classroom.

1.01.01

1.01.01.02 distinguish between above and below

STRATEGY 1: Ask the students to stand. Demonstrate while saying, "Hold your hands above your head. Put your feet below the table. Reach down and place your hand below your knee. Place your finger above your nose." Continue this procedure.

STRATEGY 2: Prepare and distribute crayons, sheets of drawing paper which have been folded in half horizontally, small pictures cut from magazines and paste.

Ask the students to use their crayons to draw a line on the fold.

e.g.,

Say, "Paste the pictures above the line." Ask a student to tell the class what he/she has done. e.g., "I pasted a cat above the line."

Distribute a second sheet of paper and repeat the procedure. Ask the students to paste pictures below the line.

Write the words above and below on each student's papers.

1.01.01.03 distinguish among in, on and off

STRATEGY 1: Prepare a set of large geometric shapes and spread them on the floor. Ask the students to sit on the floor around the shapes. Ask various students to step on the shapes. Say,

"Step on the blue shapes.
Now step on the green shapes.

STRATEGY 1: cont'd

Step off the green shapes.
Step off the blue shapes.
Step on the red shapes.
Put the blue shapes in the box.
Put the red shapes in the box."

Continue this procedure varying directions each time.

STRATEGY 2: Distribute a container with a lid and a counting chip to each student. Say, "Take the lid off your container and put it on your desk. Put the chip in the container. Put the lid on the container."

Say, "Put your hands in your desk. Put your hands on your desk. Take your hands off your desk." Continue this procedure, giving the students other directions to follow.

1.01.01.04 **distinguish between over and under**

STRATEGY 1: Prepare and distribute a large rexographed picture of a bridge to groups of students. Seat the students in groups of four or six. Place the sheet in the center of each table. Distribute pictures of an airplane, clouds, water, the sun, moon, boats, fish, birds, helicopter and sailboats. Ask the students to identify each picture. Say, "Find a picture of an object that goes over the bridge. Place the object over the bridge. Find a picture of something which would be found under the bridge. Place it under your bridge."

Continue in this fashion until all the pictures have been used.

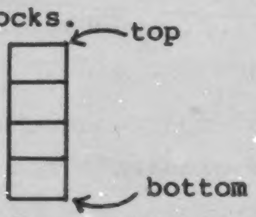
STRATEGY 2: Prepare a string approximately two meters long. Ask two students to hold the string. Ask other students to step over or crawl under the string and to tell the class what he/she did.

1.01.01.05 distinguish between top and bottom

STRATEGY 1: Prepare and distribute interlocking cubes or small blocks. Say, "Build a tower of blocks just like mine." (Demonstrate a vertical column.) Point to the top block. Say, "This is the top. There is nothing above it." Point to the bottom block. Say, "This is the bottom. The other blocks are above it. Touch the bottom block. Touch the top block. Tell us what you did."

Draw a picture showing the tower. Label the top and the bottom blocks.

e.g.,



Write an experience chart story with the students describing the tower.

We made a block tower.
We found the top block.
We found the bottom block.

The students should build their own towers and describe the tower to the rest of the class, e.g., "My top block is red. My bottom block is green."

STRATEGY 2: Prepare and distribute pegboards and pegs. Point to the top row of the pegboard. Say, "This is the top row. There are no other rows above it." Point to

STRATEGY 2: cont'd

the bottom row. Say, "This is the bottom row of the pegboard. There are many rows above it. Point to the top row of your pegboard. Point to the bottom row of your pegboard. Place the pegs in the top row of your pegboard. Take the pegs out of the top row. Place the pegs in the bottom row of your pegboard. Take them out of the bottom row of your pegboard."

Repeat this procedure.

1.01.01.06 distinguish between inside and outside

STRATEGY 1: Say, "We are in our classroom. What are some of the objects which are inside the room with us?" (Desks, chairs, books.) Say, "Let's look out the window. What are some of the objects outside our classroom?" (Cars, people, trees and clouds.)

Repeat this procedure, using other examples of "inside" and "outside."

Develop an experience chart listing objects that are inside the classroom and outside the classroom.

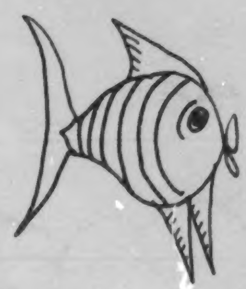
STRATEGY 2: Prepare and distribute a container (e.g., a milk container) and some small objects (e.g., a chip, a paper clip, a crayon) to each student. Say, "Put the crayon inside the container. Put the paper clip inside the container. Place the crayon outside the container."

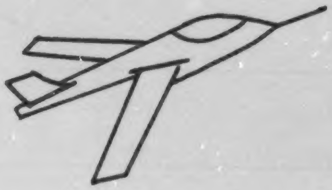
Continue this procedure using other directions to illustrate "inside" and "outside."

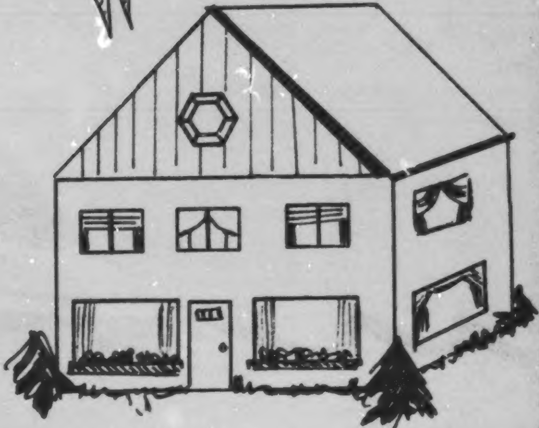
P.O. 1.01.01.01

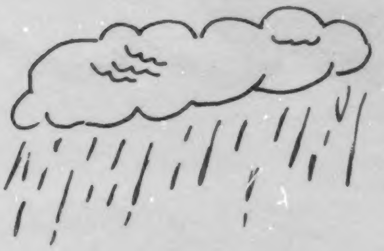
NAME: ______________________ CLASS: __________ DATE: ________

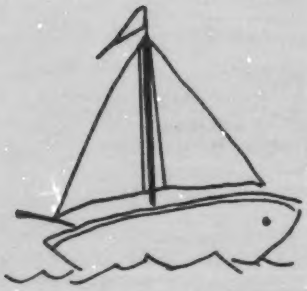
Color the objects which can be found up in the sky.

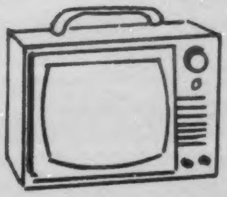


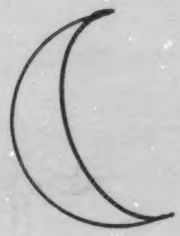


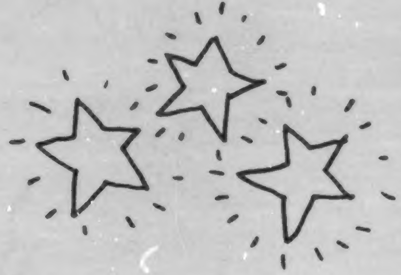








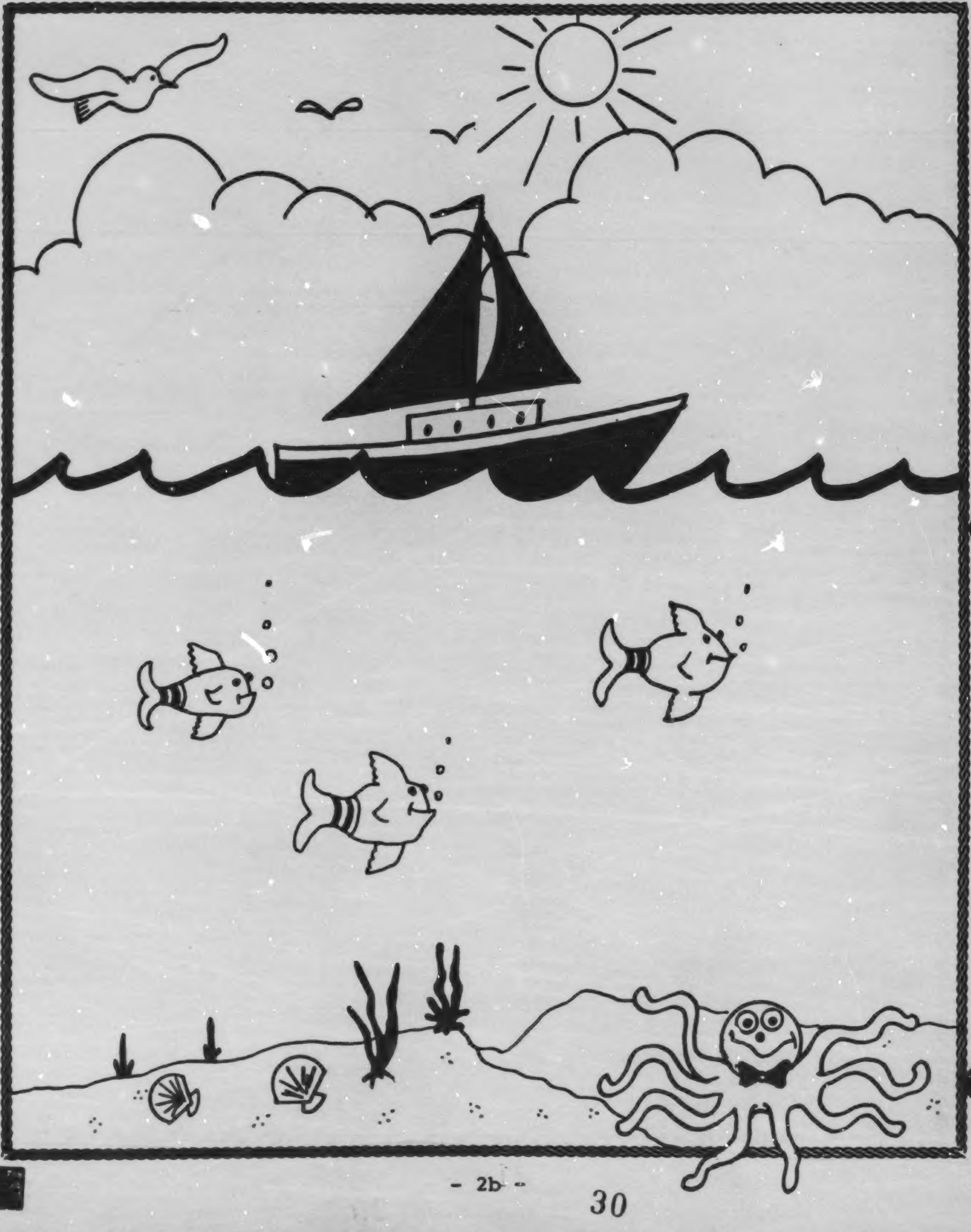




P.O. 1.01.01.02

NAME: ______________________ CLASS: ________ DATE: ________

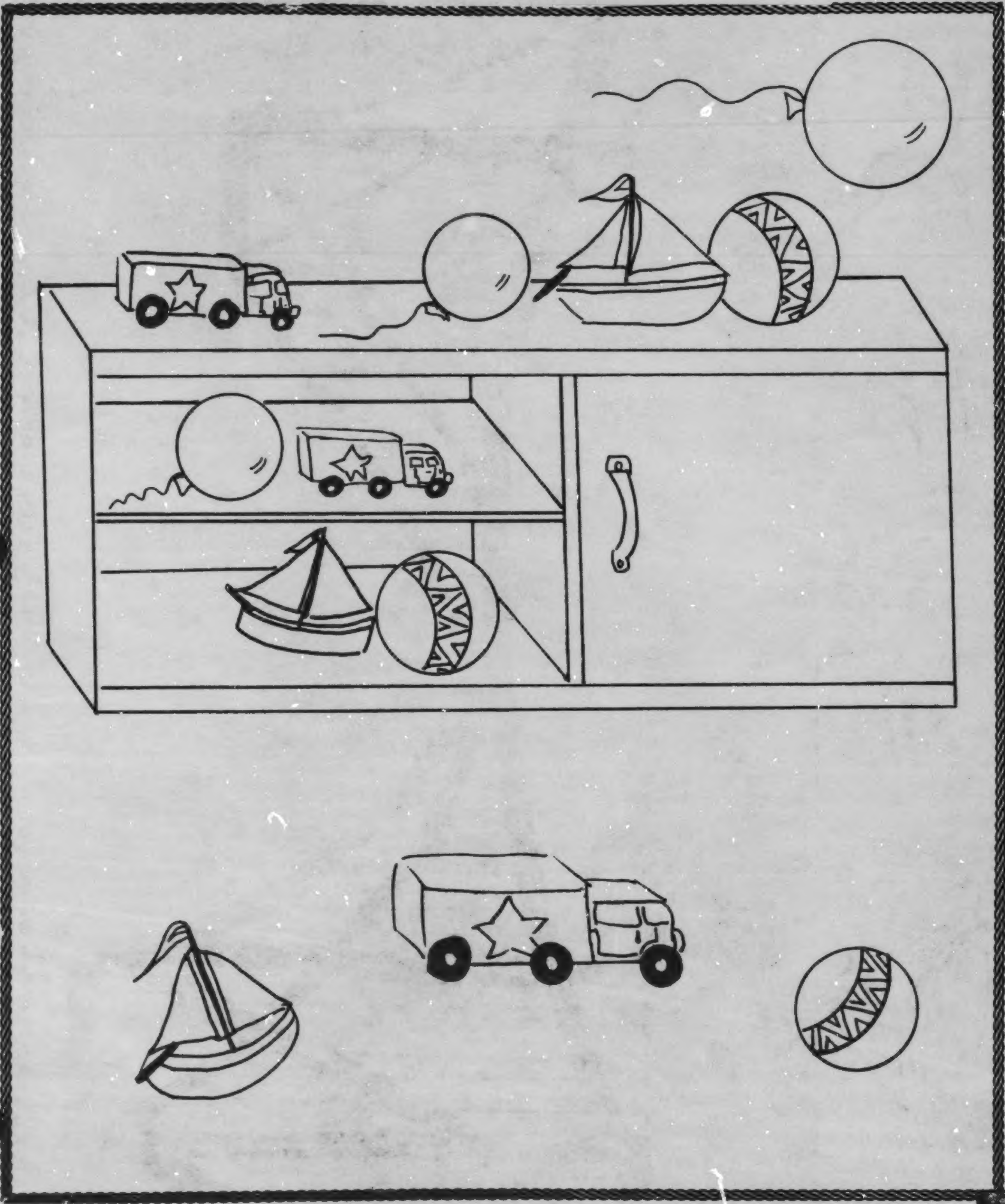
Color the pictures above the boat yellow and blue.
Color the pictures below the boat green and red.



P.O. 1.01.01.03

NAME: ______________________ CLASS: __________ DATE: __________

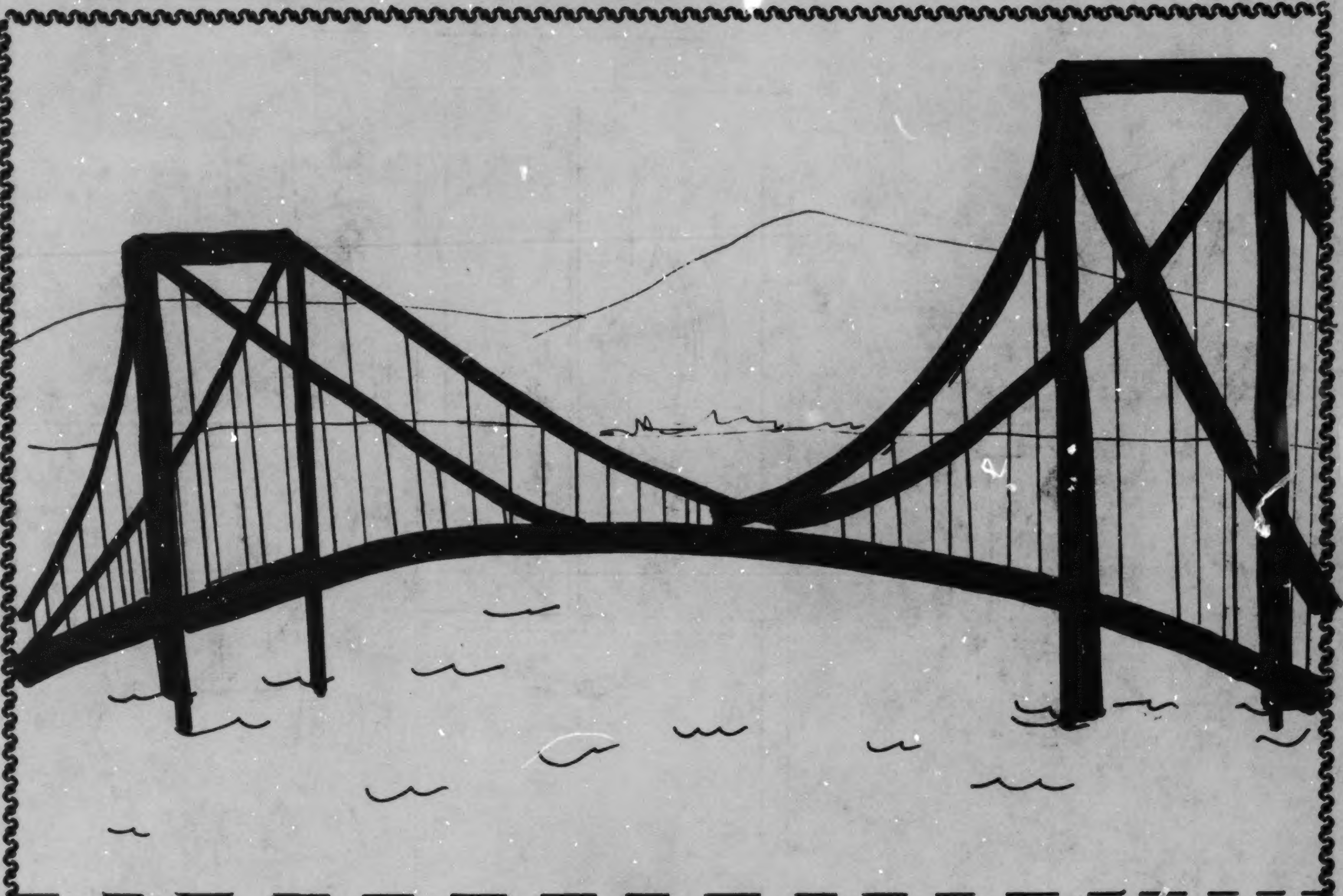
Color the objects on the top of the chest green.
Color the objects in the chest red.
Color the objects off the chest blue.

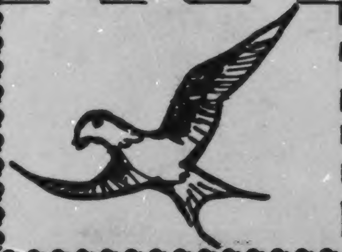


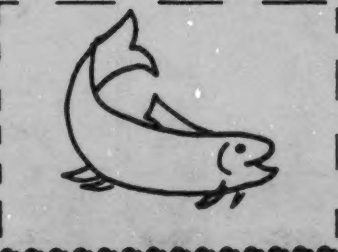
P.O. 1.01.01.04

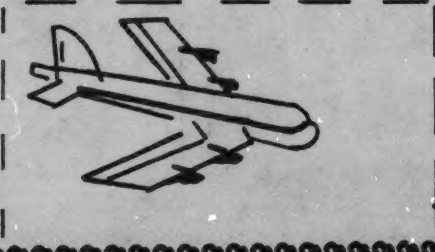
NAME: ____________ CLASS: ____________ DATE: ____________

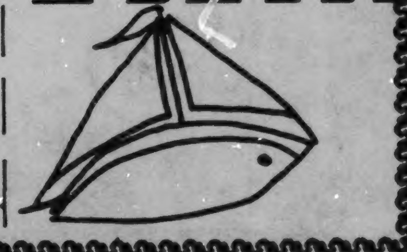
Cut out the pictures. Paste them where they belong.







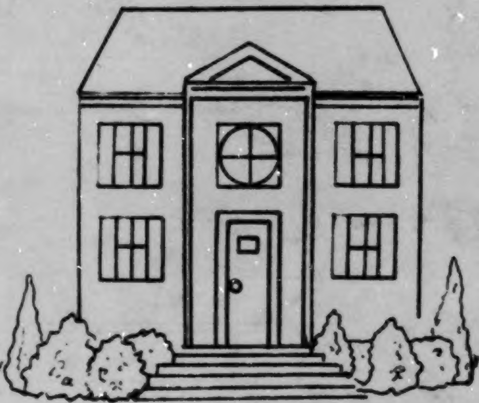


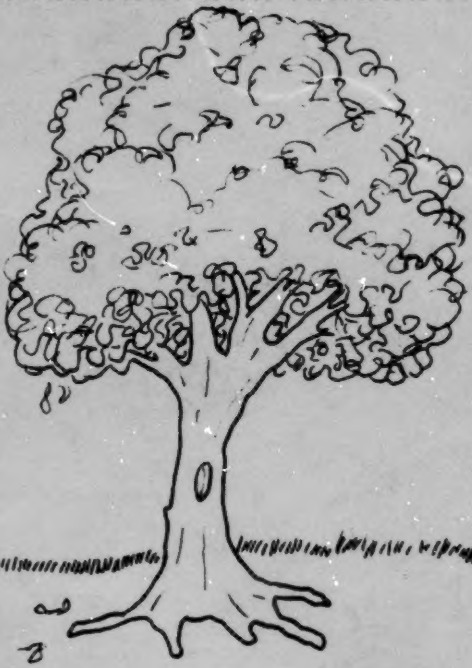


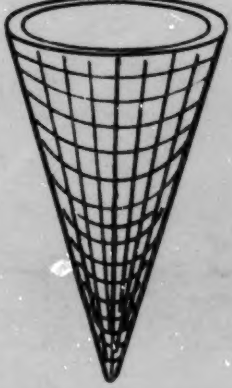
P.O. 1.01.01.05

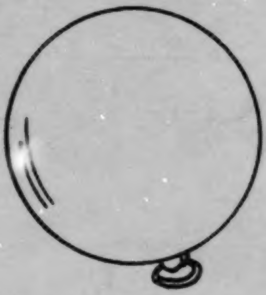
NAME: ______________________ CLASS: __________ DATE: ________

Draw a chimney on top of the house.
Draw a flower at the bottom of the tree.
Draw a scoop of ice cream on top of the cone.
Draw a string on the bottom of the balloon.





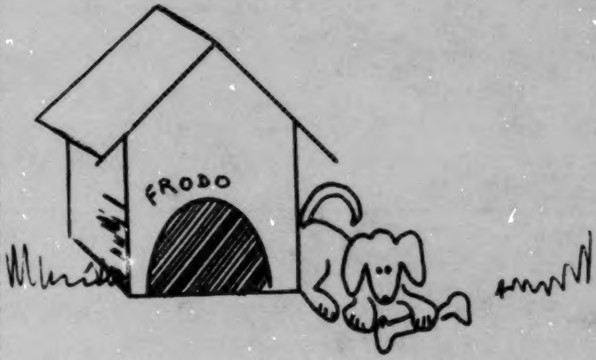


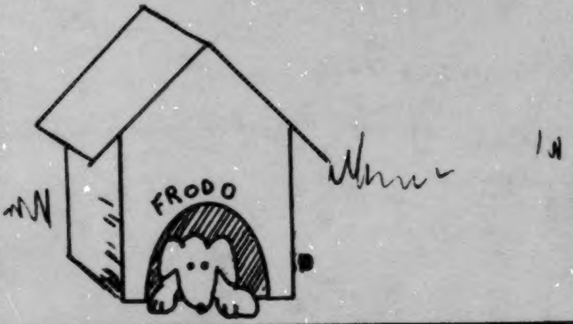


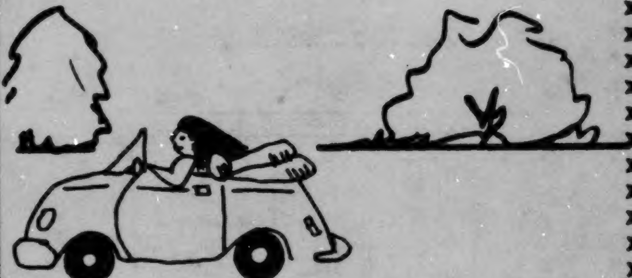
P.O. 1.01.01.06

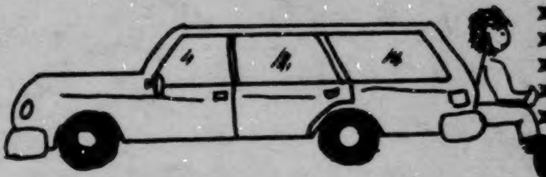
NAME: ______________________ CLASS: __________ DATE: ________

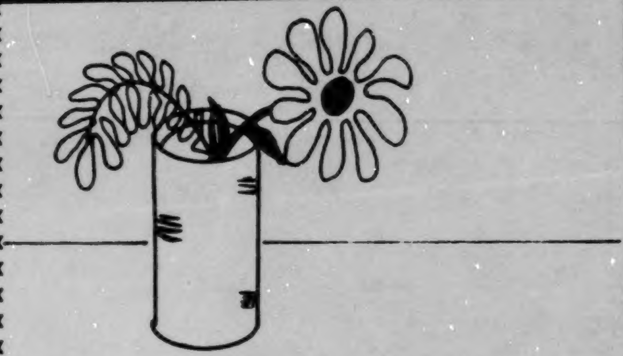
Draw a ring around the pictures which show something inside.

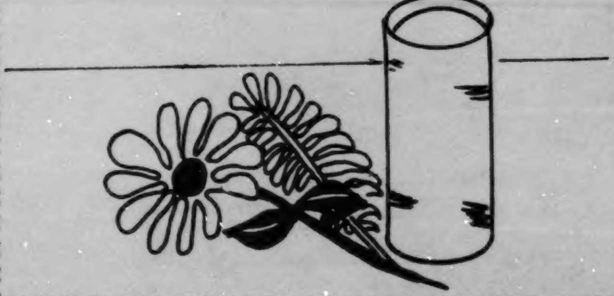


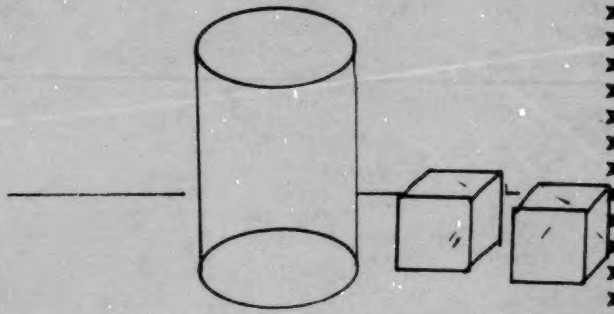


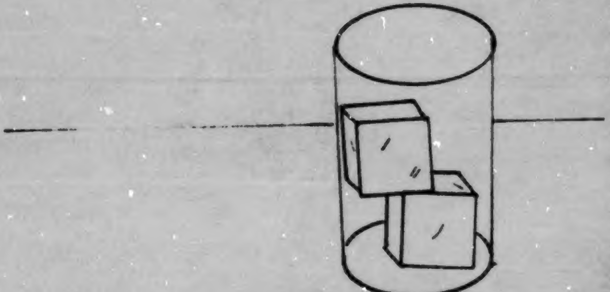












Unit 2

1.10.01 SEASONS OF THE YEAR

(1 lesson/ongoing)

PERFORMANCE OBJECTIVES

The student will be able to...

1.10.01.01B	name and sequence the seasons of the year; e.g., summer, fall, winter, spring
1.10.01.02B	name the holidays as they occur; e.g., This month we will celebrate Halloween.
*1.10.01.03A	name the current season, the season that came before and the season that will soon follow. e.g., It is fall. Last season was summer. Next season will be winter.

1.10.01

VOCABULARY

TERMS

season
spring
winter
summer
fall
month
holiday

GETTING STARTED

Prepare and display pictures of snowy, sunny, cloudy and rainy days. Prepare pictures of objects associated with each type of weather, e.g., a sled, umbrella, skis, bicycle.

Discuss the weather pictures with the students. Hold up the picture of the sled. Say, "On what kind of day, would we use a sled?" (a snowy day) Ask a student to place the sled under the picture of the snowy day. Continue this procedure using the other pictures.

Prepare and display pictures of items of clothing associated with hot and cold. e.g., mittens, bathing suit, scarf, snow suit, shorts ... Label two columns on the chalkboard (Hot and Cold). Ask students to choose a picture and place it in the appropriate column. Ask students to explain why the picture was placed in that column.

1.10.01

1.10.01.01 **name and sequence the seasons of the year**

STRATEGY 1: Prepare and distribute four sheets of paper to each student. Say, "The year is divided into four parts. Each part is called a season. The seasons have names. They are winter, spring, summer and fall." Discuss the characteristics of each season, e.g., summer - hot - go swimming, and stress the sequence.

Write the names of the seasons in sequence on the chalkboard. Have students label each paper with a different season, Winter, Spring, Summer and Fall. Say, "Find your Winter paper and draw a picture of winter fun." Continue this procedure for the other seasons.

Display sample drawings. Say, "What is the name of this season? What season comes next? What season came before?"

Repeat this procedure throughout the year.

STRATEGY 2: Take the class outdoors to adopt a class tree. Take photographs of the tree in each season. Label each photograph according to the season. Upon returning to the classroom write an experience chart and draw pictures of the tree. Make an ongoing "tree book" which might include stories of each season. Encourage the students to read the book during library time.

1.10.01.02 **name the holidays as they occur**

STRATEGY 1: Prepare and display word cards with the names of the months on a bulletin board. Next to each month, staple pictures naming the holidays which occur during that month. At the beginning of each month, discuss that month's holidays.

1.10.01

STRATEGY 2: Each month, prepare a new monthly bulletin board. Ask the students to prepare drawings for the holidays in that month. The previous month's holiday pictures can then be collated in a folder for a yearly holiday scrapbook.

Repeat this procedure at the beginning of each new month. During June, complete the pictures for the summer months.

1.10.01.03 **name the current season, the season that came before and the season that will soon follow.**

STRATEGY 1: Write "It is winter." on the chalkboard. Say, "What is the name of the last season and the next season?" (Make sure to keep the format consistent.)

e.g.,

It was ____________________.
It is Winter.
It will be ________________.

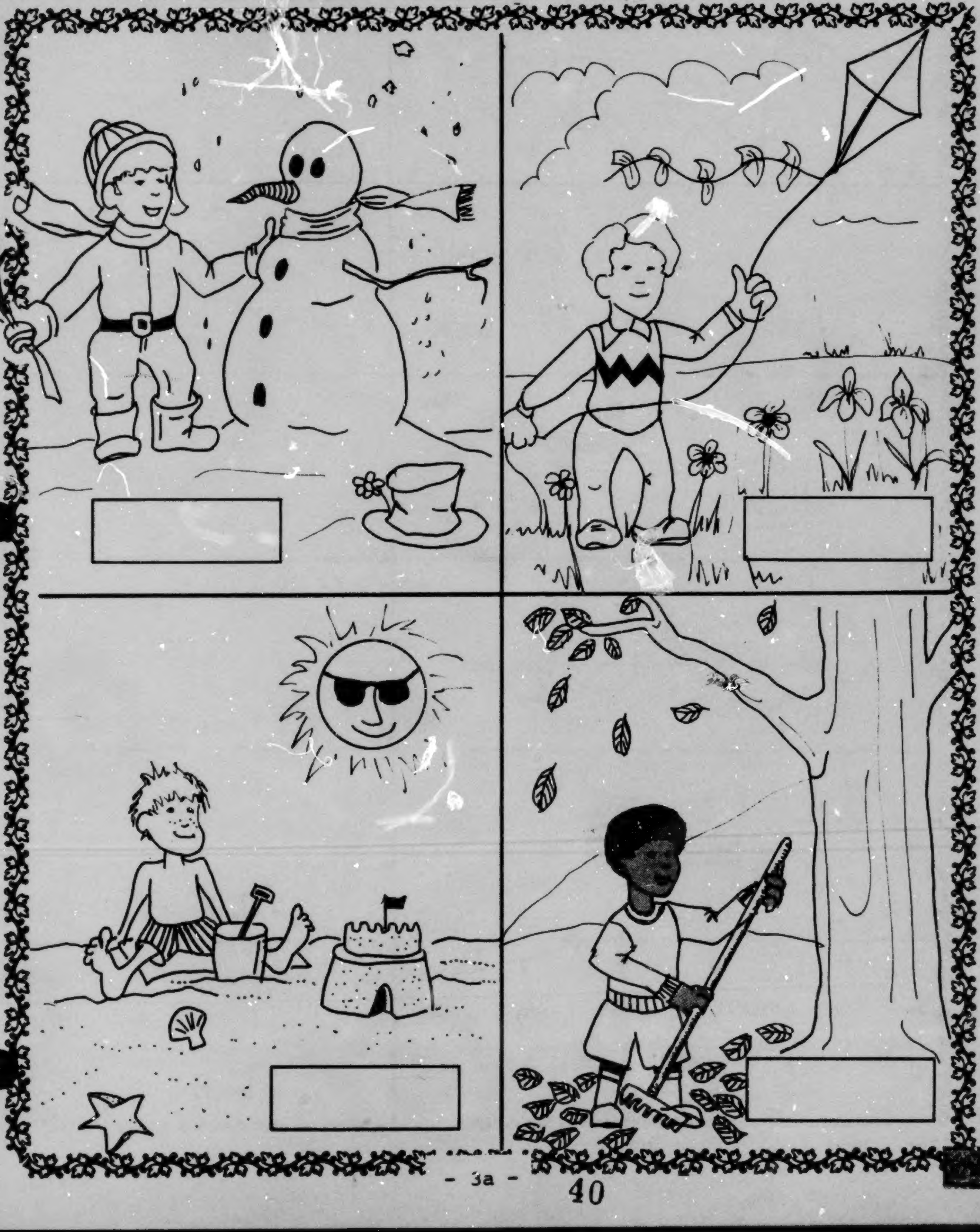
Ask the students to complete these sentences. The names of the seasons should be written clearly to assist the students with their spelling.

STRATEGY 2: Ask the students to form a circle. Ask one child to stand in the center. Sing (tune of "Muffin Man"), "Oh, do you know what season I am? What season I am? What season I am? Oh, do you know what season I am? I chased away the summer (fall, winter, spring)," or "The days are getting shorter," or "It's very, very cold..." Present some reference to the season past, present or soon to be arriving. With more mature children, pantomime can be used to give the hints.

P.O. 1.10.01.01

NAME: ______________________ CLASS: ________ DATE: ________

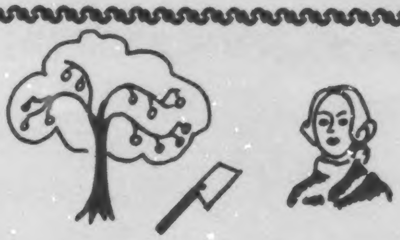
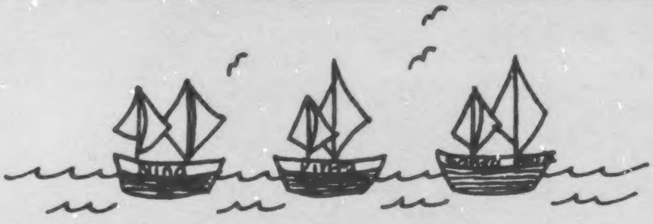
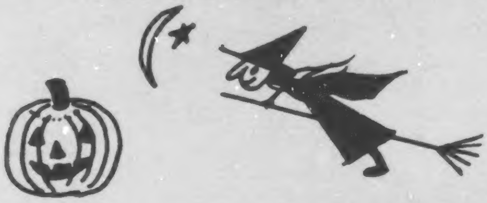
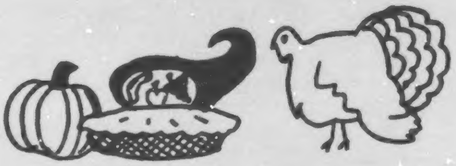
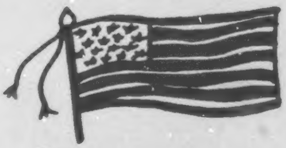
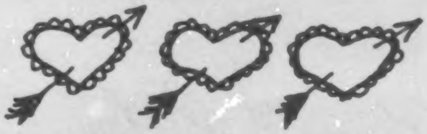
Write the name of the season that each picture shows.



P.O. 1.10.01.02

NAME: ________________________ CLASS: __________ DATE: ________

Match the picture to the holiday it represents.

	Columbus Day
	Flag Day
	George Washington's Birthday
	Valentine's Day
	Halloween
	Thanksgiving

P.O. 1.10.01.03

NAME: ______________________ **CLASS:** ________ **DATE:** ________

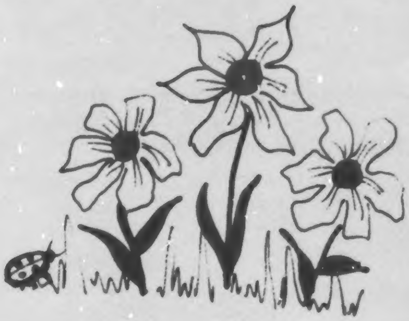
Fill in the blanks with the correct season.

Winter, Spring, Summer, Fall

It was winter.

It is spring.

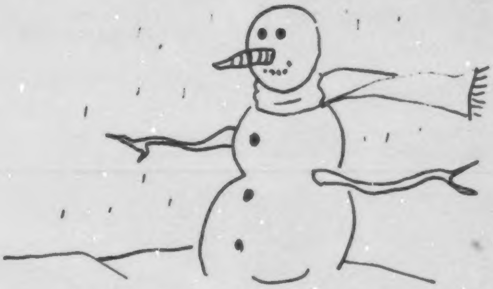
It will be summer.



It was __________.

It is winter.

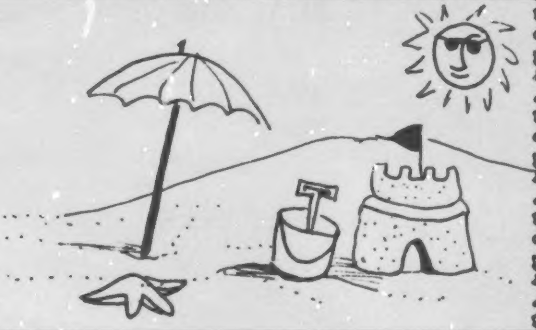
It will be __________.



It was __________.

It is summer.

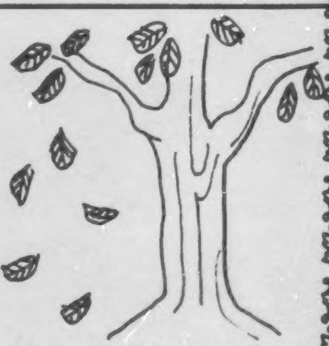
It will be __________.



It was __________.

It is fall.

It will be __________.



1.10.02 DAYS OF THE WEEK

(1-2 lessons/ongoing)

PERFORMANCE OBJECTIVES

The student will be able to...

1.10.02.01A	name and sequence the days of the week; e.g., Sunday, Monday, Tuesday, Wednesday, ..., Saturday
1.10.02.02A	identify what day of the week yesterday was, today is, and tomorrow will be; e.g., Yesterday was Sunday. Today is Monday. Tomorrow will be Tuesday.
*1.10.02.03A	name the current date; e.g., Today is Monday, September 16, 19__
1.10.02.04B	solve story problems related to the skills learned in this module. e.g., On which day of the week does your birthday fall during this year?

1.10.02

VOCABULARY

TERMS

yesterday
today
tomorrow

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

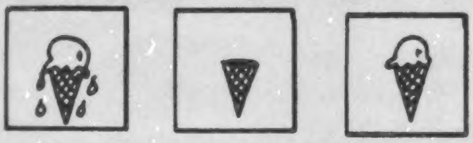
January
February
March
April
May
June

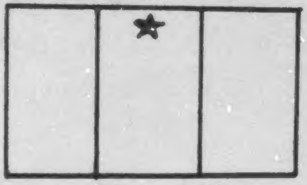
July
August
September
October
November
December

GETTING STARTED

Prepare and distribute sequence cards and drawing paper divided into thirds with a star in the center section.

e.g.,





Say, "Find the part of the paper with the star. Place the card with the dripping cone in the starred part of your paper. Place the other cards on the paper to show how the cone looked before and after it dripped. Ask a student to tell a story about the sequence.

Repeat this procedure using other sequence cards.

Prepare and distribute pictures displaying day and night activities. Draw a picture of the sun and the moon on the chalkboard to signify day and night. Ask each student to tape his/her card on the chalkboard under either the sun or the moon and explain their reason for placing the picture in a particular column.

e.g.,

The girl is sleeping. It happens at night.

1.10.02

1.10.02.01 **name and sequence the days of the week**

STRATEGY 1: Prepare and distribute a rexographed sheet with seven houses and a set of cards with the names of the days of the week. Print a different day of the week on seven rolled up newspapers. Say, "A newsboy delivered these newspapers during the week. The first batch of papers was delivered on Sunday. (Display Sunday's paper.) Put your Sunday card under the first house as I am doing." Place the newspaper on the chalkboard ledge under the first house. Say, "The boy delivered another batch of newspapers on Monday." Continue this procedure for the rest of the week. Retrace the sequence of the boy's workweek several times. Mix up newspapers and ask the children to scramble their cards. Say, "Can you deliver the boy's newspapers by yourselves?" Ask different students to put the newspapers in order at the chalkboard.

STRATEGY 2: Ask the students to respond to questions to determine the names of the days of the week in random order, e.g., "Which is the last day of the school week?" Teach the song, "Here We Go Round the Mulberry Bush". Pantomime the daily activities, e.g., Sunday - drive a car; Monday - wash our clothes; Tuesday - iron our clothes; Wednesday - sweep the floor; Thursday -wash the windows; Friday - shop for food; Saturday -take a bath. Pantomime the activities in order and ask the children to identify the day associated with each activity.

1.10.02

1.10.02.02 **identify what yesterday was, what today is, and what tomorrow will be**

STRATEGY 1: Prepare and display large flashcards with the days of the week in sequence and a day of the week chart. e.g,

Yesterday was _____________.
Today is _________.
Tomorrow will be ___________.

Read the sentences with the students as they copy them into their notebooks. Ask a student to pick the correct card to complete the first sentence and hold it up in the blank space. Do the same for the second and third sentences.

Repeat this procedure using other days, to give many students the opportunity to participate.

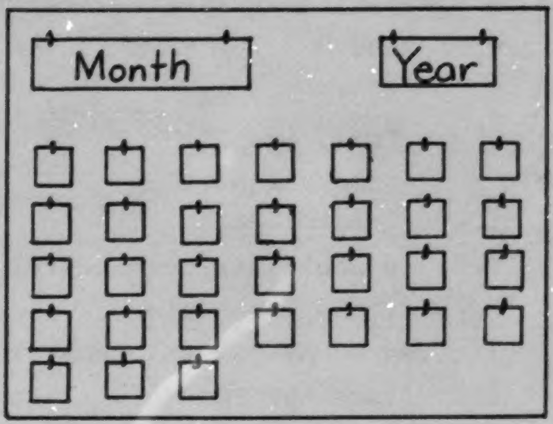
Yesterday was ______________.
Today is ___________________.
Tomorrow will be ___________.

STRATEGY 2: Prepare and distribute a strip labeled with the days of the week in order and three flashcards labeled TODAY IS, YESTERDAY WAS and TOMORROW WILL BE. Place the TODAY IS flashcard in front of the correct day and sing to the tune of "Hello, Everybody - Yes, Indeed". e.g., Today is Tuesday. Yes, indeed. Yes, indeed. Today is Tuesday. Yes, indeed. Yes, indeed, my darling. Say, "Match your card to the correct day on your strip." Continue this procedure for yesterday and tomorrow. Say, "Listen carefully. Can I catch you with the names of the days?" If the day is Wednesday, sing, "Today is Friday." Class responds, "No, indeed." Say, "Who can sing it the right way?" A student sings and the class replies with the appropriate

STRATEGY 2: cont'd "Yes, indeed" or "No, indeed." Proceed with, "Who will sing it the right way for yesterday? ...tomorrow?"

1.10.02.03 name the current date

STRATEGY 1: Prepare a large oaktag calendar to be used throughout the year. Rule the calendar and place paper clips on the oaktag to hold the names of the months, and the numerals for the year and dates. e.g.,



Each school day, ask one student to go to the calendar and clip the correct month, year and date cards on it. He/she then announces that day's date; e.g., Today is Monday, October 4, 19__ __. At their seats, students mark their individual calendars which are pasted in their notebooks.

1.10.02

STRATEGY 2: Begin each morning by asking a student to greet the class. Ask the student to say, "Good morning. Today is Monday. The date is September 16, 19__ __."

1.10.02.04 **solve story problems related to skills learned in this module**

STRATEGY 1: On the first day of each new month, have students display their completed calendar from the previous month. Elicit holidays, birthdays and special happenings from the students. Ask students to note these dates on their individual calendars as you do it on the class calendar.

Say, "Let's look at our calendar for December. On what day of the month does Sandy's birthday fall? ...is Christmas? On what days are we off from school?"

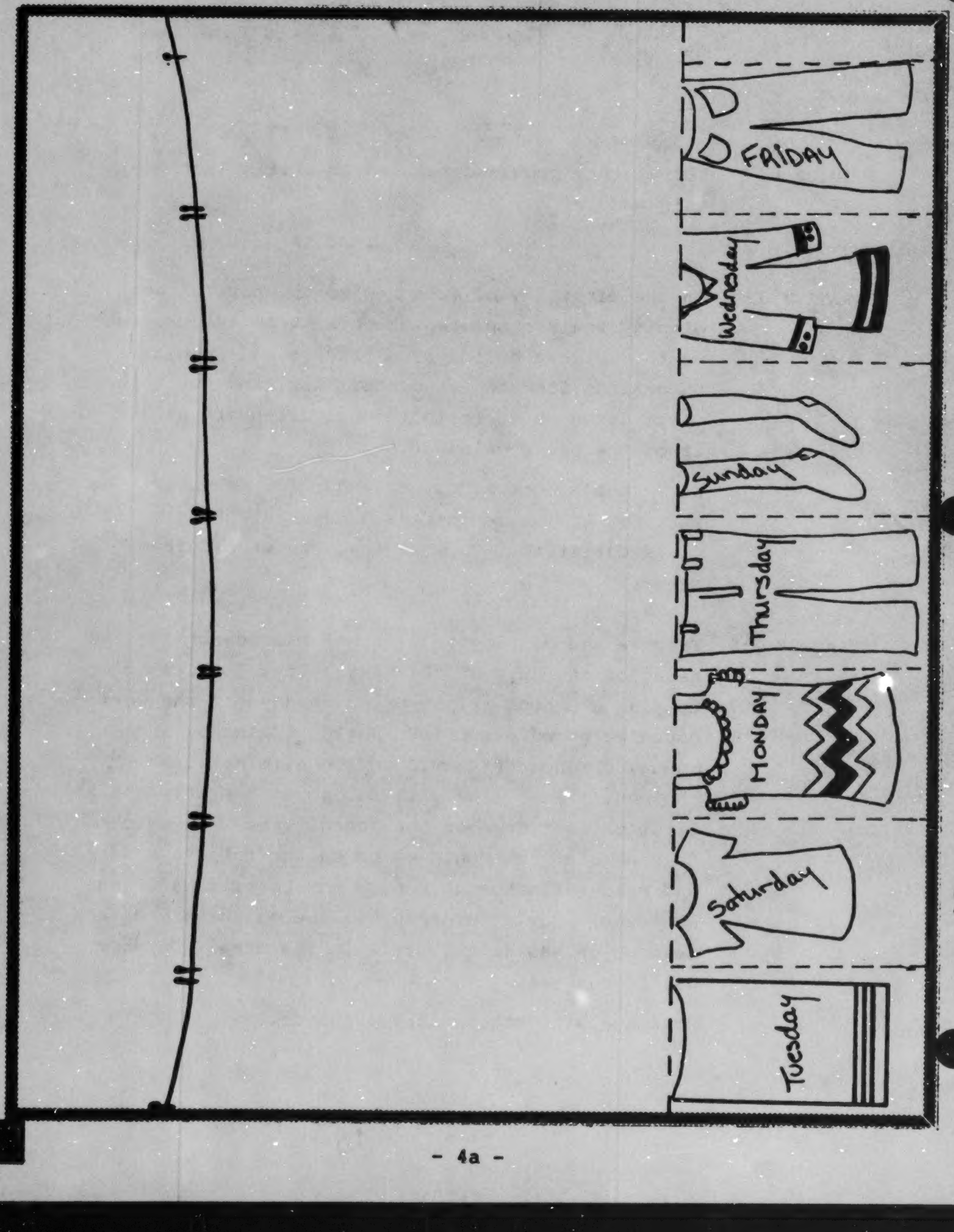
STRATEGY 2: Prepare and display in sequence flashcards for the names of the days of the week. Say, "We are going to plan a school trip. On which days of the week could we go on our trip? Why?" (Saturday and Sunday flashcards should now be eliminated as choices.) Say, "We will not go on our trip the first or last days of the school week. On which days of the week could we go on our trip?" Monday and Friday flashcards should now be eliminated as choices.) Say, "Our trip will be on the day of the week which has nine letters in its name. On what day is our trip?"

Continue with other story problems.

P.O. 1.10.02.01

NAME:________________________________CLASS:_________DATE:_______

Cut out the week's wash clothes. Paste the clothes on the line in the order that they were washed.


Tuesday
Saturday
MONDAY
Thursday
Sunday
Wednesday
FRIDAY

P.O. 1.10.02.02

NAME: ______________________ CLASS: ________ DATE: ______

Circle the correct answer.

Today is ______________.

Sunday Monday Tuesday Wednesday
Thursday Friday Saturday

Yesterday was ______________.

Sunday Monday Tuesday Wednesday
Thursday Friday Saturday

Tomorrow will be ______________.

Sunday Monday Tuesday Wednesday
Thursday Friday Saturday

P.O. 1.10.02.04

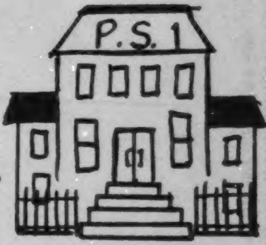
NAME: ______________________ CLASS: ________ DATE: ________

Circle the correct answer.

Today is Friday.

Tomorrow we do not go to school.

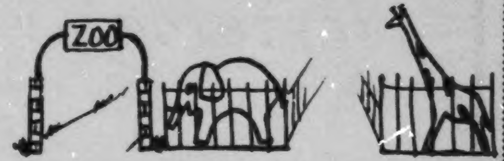
Tomorrow is __________.



Monday Saturday Thursday

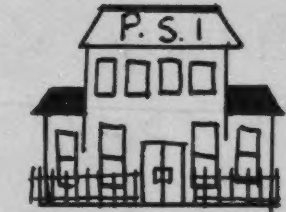
Today is Sunday.

We went to the zoo.



Tomorrow is __________.

We will go to school.



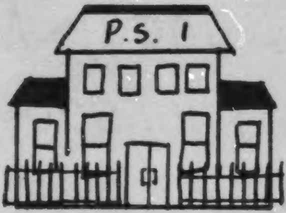
Tuesday Saturday Monday

Today is Saturday.

All I do is play.

Yesterday was __________.

In school I did stay.



Monday Friday Sunday

1.01.02 SPATIAL RELATIONSHIPS EXTENDED

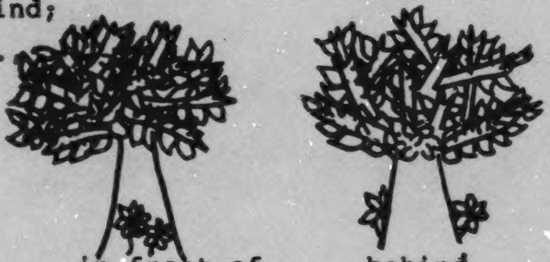
(2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

1.01.02.01A distinguish between in front of and behind;

e.g.



1.01.02.02A distinguish among before, after, between and next to;

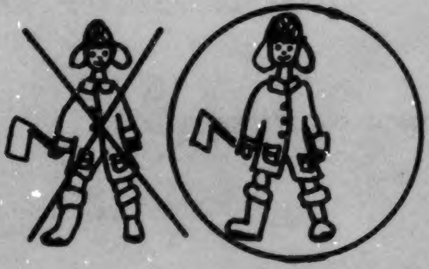
e.g.,

○ △ □

Which shape comes before the △?
Which shape comes after the ○?
Which shape comes between the ○ and the □ ?

Which shape is next to the □?

1.01.02.03A distinguish between left and right;
e.g.,

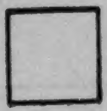


Put an X on the firefighter on the left.

Circle the firefighter on the right.

1.01.02.04A distinguish among first, middle, and last.
e.g.,

first



middle

last

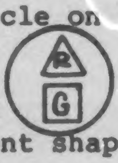
1.01.02

VOCABULARY

TERMS

in front of
behind
before
after
between
next to
left
right
first
middle
last

GETTING STARTED

Prepare a variety of magnetized geometric shapes or colored squares, circles and triangles backed with tape. Draw a large circle on the chalkboard and place two shapes inside the circle, e.g., 

Say, "Which shapes are inside the circle? Which shape is on top? Which shape is on the bottom?" Select a different shape, place it outside the circle and say, "Which shape is outside the circle?" Vary the activity by asking the students to place specific shapes in positions you designate. Repeat this procedure using the terms, "top, bottom, inside, outside, over, under, above and below".

Ask the students to sit in a large circle in the middle of the room. Say, "Today we are going to play a game. I want everyone to listen very carefully and do as I say. Put your hands over your head. Put your hands under your chin. Put your hands on top of your lap. Now everyone stand up. Put your hands above your waist. Put your hands below your knees. Put one foot inside the circle. Put one foot outside the circle. Vary the activity by asking individual students to complete a specific direction.

Continue this procedure using the terms, "top, bottom, over, under, inside, outside, on, off, up, down" when giving directions.

1.01.02

1.01.02.01 **distinguish between in front of and behind**

STRATEGY 1: Say, "Who would like to come to my desk and stand in front of it? Who would like to stand behind my desk? Who would like to stand in front of me? ...behind me?" Ask several students to come to the front of the room. Say, "Who is standing in front of Maria? Who is standing behind Paul? Then ask individual students to choose an object, e.g., chair, bookcase, garbage pail and indicate whether they are standing in front of or behind it.

Continue this procedure.

STRATEGY 2: Prepare and distribute a cube and various shapes to each student, e.g., a circle, a square, a triangle, and a star. Say, "Place the cube on your desk. Pick up the square. Place the square in front of the cube. (Demonstrate.) Say, "Do you see the cube? Why not?" Put down the square. Pick up the star. Place the star behind the cube. (Demonstrate.) Say, "Do you see the cube? Why?"

Continue this procedure, placing one shape in front of or behind the cube.

1.01.02.02 **distinguish among before, after, between and next to**

STRATEGY 1: Ask three students to come to the front of the room and stand on line. Say, "Who comes before Jill?" Who comes after John? Who is standing next to Danny?"

Continue this procedure with other students. Say, "Will the person standing between Ronald and Sandy raise your hand? Will the person standing next to Ronald raise your hand?"

STRATEGY 2: Distribute three different shapes to each student, e.g., a square, a circle, and a triangle. Say, "Place these shapes in a row on your desk: triangle, circle, square." Draw the pattern on the chalkboard so that the students can check their work.

Say, "Hold up the shape that comes after the circle. What is it? (A square.) Hold up the shape that comes before the circle. What is it? (A triangle.) Hold up the shape that comes between the triangle and the square. What is it? (A circle.) Hold up the shape that is next to the square. What is it?" (A circle.)

Continue this procedure using other positional directions. Ask the students to arrange the shapes in a different pattern, and draw the pattern on the chalkboard. Continue this procedure using new patterns.

1.01.02.03 distinguish between left and right

STRATEGY 1: Prepare and distribute a large rubber band to each student. Ask each student to raise his/her left hand and place the rubber band around his/her wrist. Ask the students to stand.

Say, "You are going to touch different parts of your body which are on the same side as the hand with the rubber band. Touch your left ear. Touch your left eye. Touch your left knee."

Ask the students to raise their right hands and transfer the rubber band to that wrist. Repeat this procedure by saying, "Touch your right foot. Touch your right cheek."

Continue this procedure, using other parts of the body.

1.01.02

STRATEGY 2: Have students raise their right hand , left hand, right foot ... Teach the class "The Hokey Pokey." Have students form a circle and dance "The Hokey Pokey."

1.01.02.04 distinguish among first, middle, and last

STRATEGY 1: Ask three students to come up to the front of the room and stand in a row. Starting from the left, stand behind the first student. Say, "Bill is first." Move behind the second student and say, "Joyce is in the middle." Move behind the third student and say, "Phyllis is last."

Ask the students to rearrange their positions and say, "Who is now first? Who is in the middle? Who is last?" Extend this activity by playing musical chairs. Place three chairs at the front of the room. Ask three students to walk around the chairs. Play the music and when it stops ask the students who is first, last and in the middle. Repeat this procedure.

STRATEGY 2: Prepare and distribute three different shapes to each student. Say, "This is a circle. It is my first shape on the chalkboard. Please put your circle as the first shape on your desk."

Hold up a triangle. Say, "This is a triangle. I will put it next to the circle. Please do the same with your triangle." Say, "Hold up the square. This is a square. I will place it after the triangle. Please do the same."

After all the shapes have been placed, say, "Which shape is first? Which shape is last? Which shape is in the middle?"

STRATEGY 2:
cont'd

Point to a shape. Say, "What position is this shape in?"

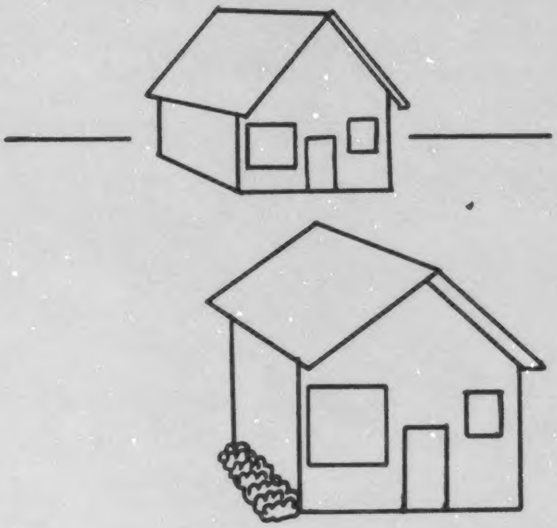
Continue pointing to the other shapes while asking about the positions. Rearrange the shapes at the chalkboard and ask the students to do the same at their desks.

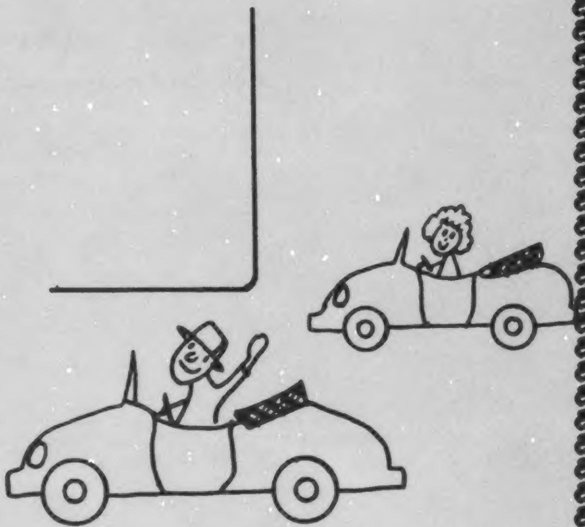
Continue this procedure using the shapes in each new arrangement.

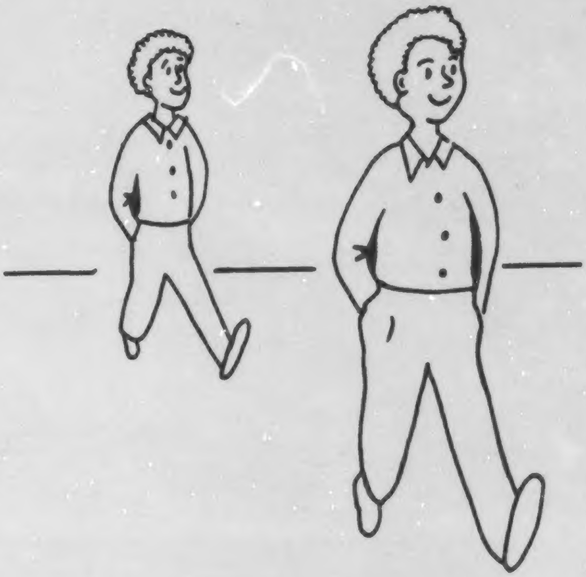
P.O. 1.01.02.01

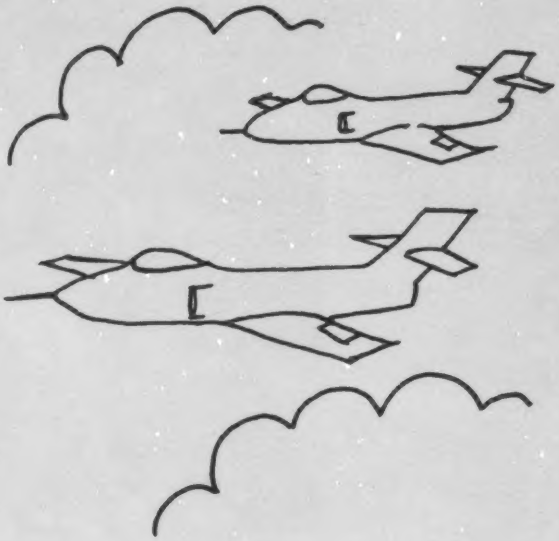
NAME: ______________________ CLASS: ________ DATE: ________

Color the one in front red.
Color the one behind blue.





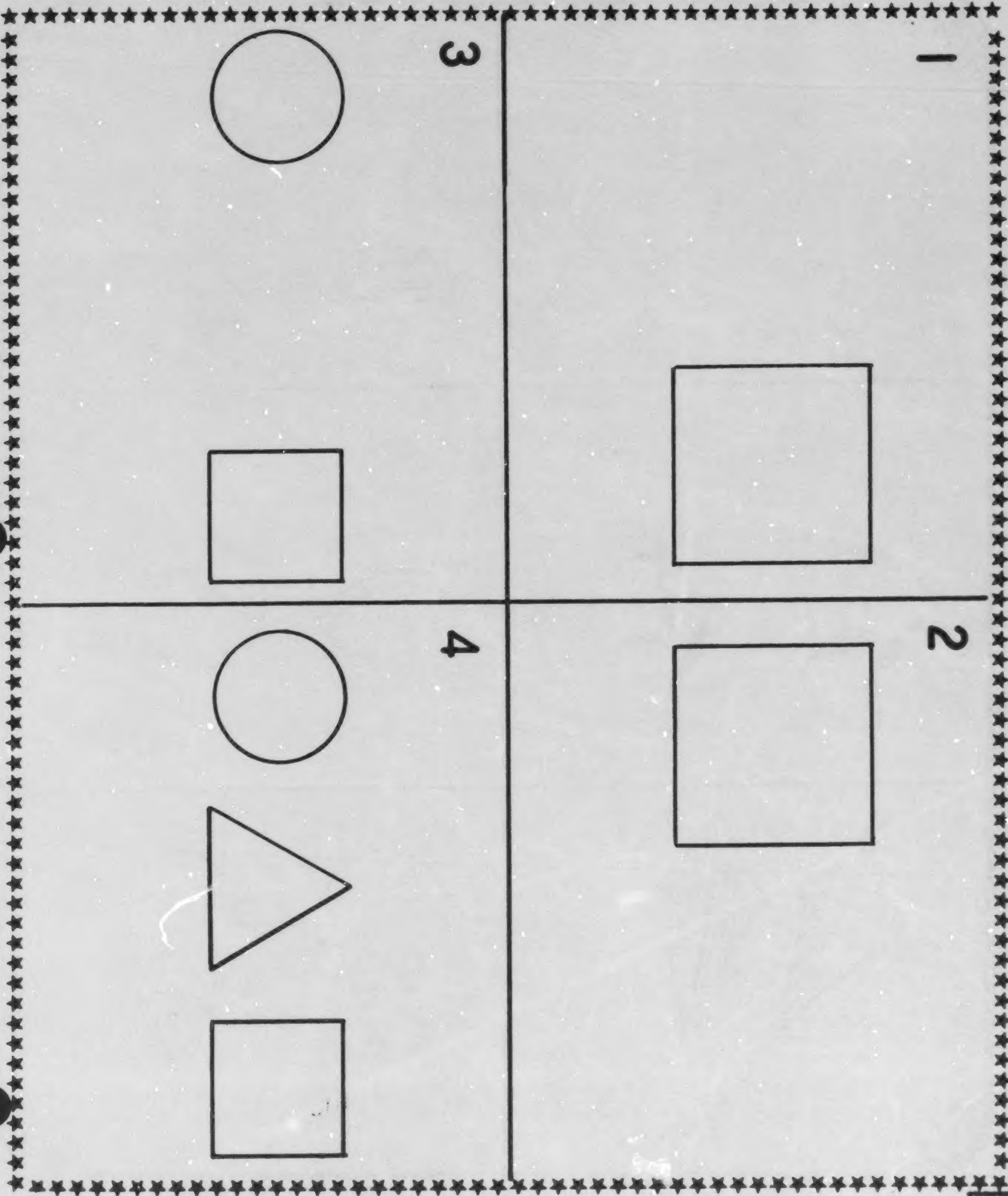




P.O. 1.01.02.02

NAME: ____________________ **CLASS:** __________ **DATE:** __________

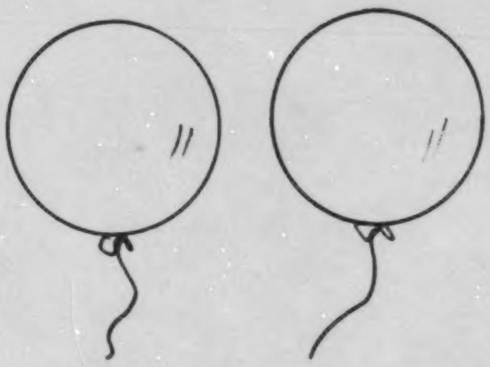
1. Draw a circle before the square. 2. Draw a circle after the square.
3. Draw a triangle between the circle and the square.
4. Color the shape next to the circle.

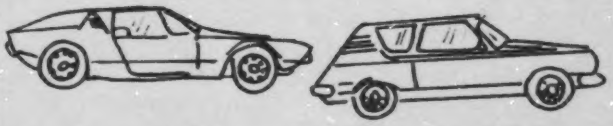


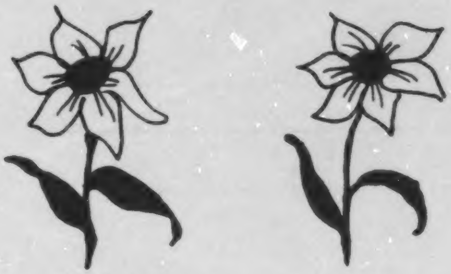
P.O. 1.01.02.03

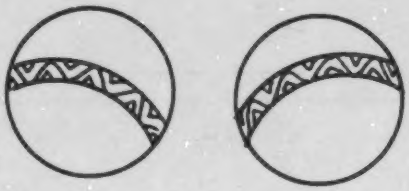
NAME:____________________________________ CLASS:________ DATE:________

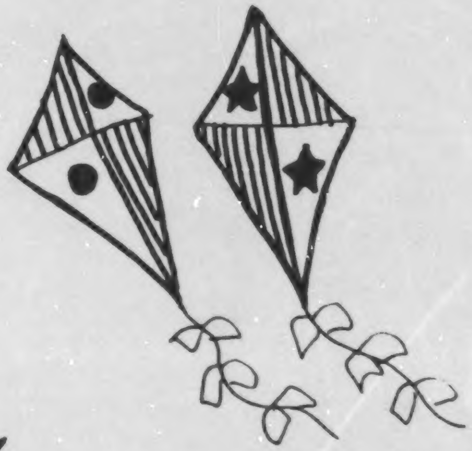
Put an X on the object on the left.
Color the object on the right.

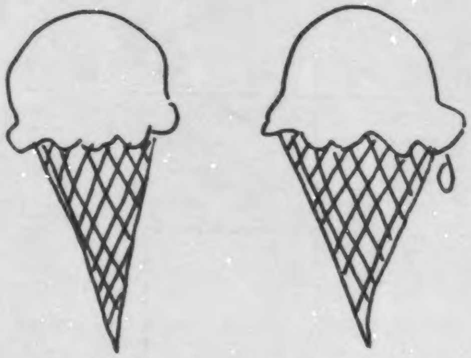








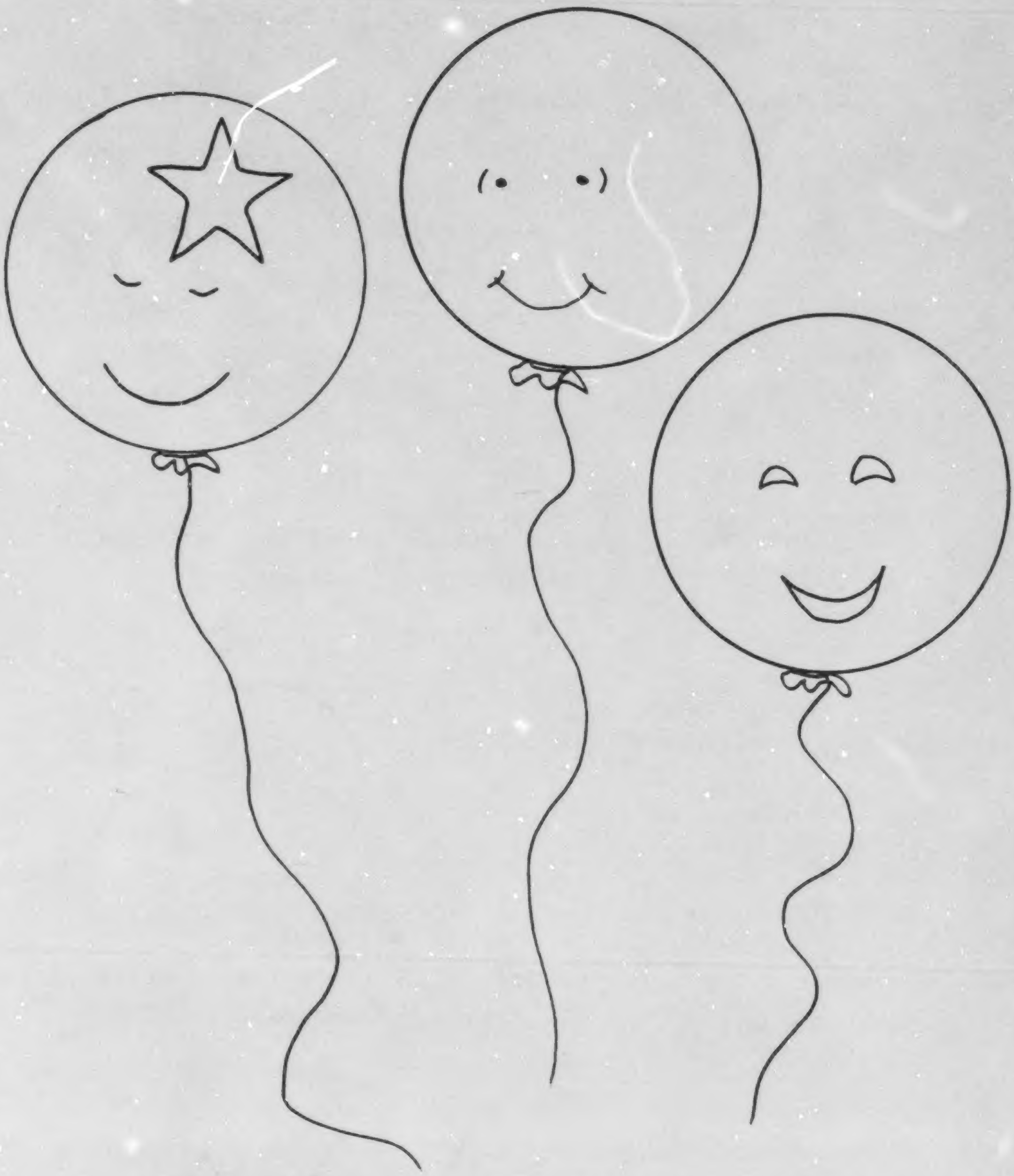




P.O. 1.01.02.04

NAME:________________________________CLASS:__________DATE:________

Start at the star. Color the first balloon blue. Color the middle balloon yellow. Color the last balloon green.



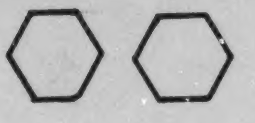
1.01.03 CLASSIFICATION BY ATTRIBUTES

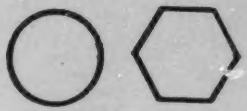
(1 lesson/ongoing)

PERFORMANCE OBJECTIVES

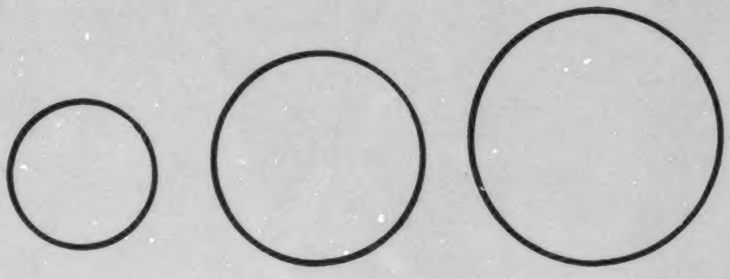
The student will be able to...

1.01.03.01A distinguish between same and different; e.g.,

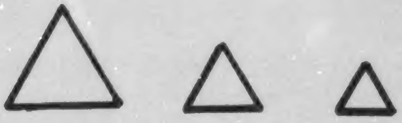




1.01.03.02A distinguish among the concepts of large, larger, and largest; e.g.,

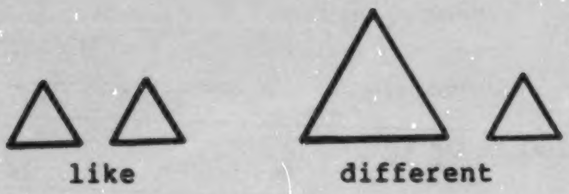


1.01.03.03A distinguish among the concepts of small, smaller, and smallest; e.g.,



1.01.03.04A distinguish between likenesses and differences;

e.g.,



1.01.03.05A solve oral story problems using the skills learned in this module.

e.g.,

Group playthings according to size.

1.01.03

VOCABULARY

TERMS

same
different
small, smaller, smallest
large, larger, largest
like

GETTING STARTED

Display a collection of items, e.g., buttons, bottle caps. Say, "I am going to start putting the buttons (bottle caps) into groups." Choose one attribute, color, for example. Begin sorting the collection. Sort enough items so that the students can begin to see the pattern. Hold up a button. Ask, "Where do you think we should put this color button? Why?" When the sorting has been completed, point to one of the groups and ask, "Why are these buttons grouped together?" Point to the other group and ask, "Why are these buttons in this group?" Elicit suggestions from the students on other ways the items may be sorted, e.g., size, composition.

Read "The Three Bears" to the class. Have available in varying sizes, (small, smaller, smallest) paper plates, chairs, tables (for beds) and bear-masks. Ask the children to act out the story emphasizing the differences in size. Write an experience chart stressing the size concepts presented in the story, e.g.,

> Daddy Bear had a big bed.
>
> Mommy Bear had a middle size bed.
>
> Baby Bear had a little bed.

1.01.03

1.01.03.01 **distinguish between same and different**

STRATEGY 1: Prepare and display three objects, e.g., two pencils and one book. Say, "Which two are the same? Why? Which one is different?"

Continue this procedure using other examples. Display two circles of the same size but of different colors. Ask, "How are these shapes the same? (Round, size.) How are they different?" (Color)

Display a square and a rectangle which are the same color. Ask, "How are these shapes the same? (Color, four sides) How are they different?" (Size, shape)

Continue this procedure using other attributes.

STRATEGY 2: Prepare and display a collection of items found in the classroom. e.g. lined paper, unlined paper, paste, tape, chalk, crayons... Hold up a piece of chalk and a crayon. Say, "Who can tell us something that is the same about the chalk and the crayon?" (Shape, size, writing implements) Who can tell us something that is different about the chalk and the crayon?" (Color, one has paper around it.)

Ask a student to go to the chalkboard, choose any two items from the collection, and tell how they are the same and how they are different.

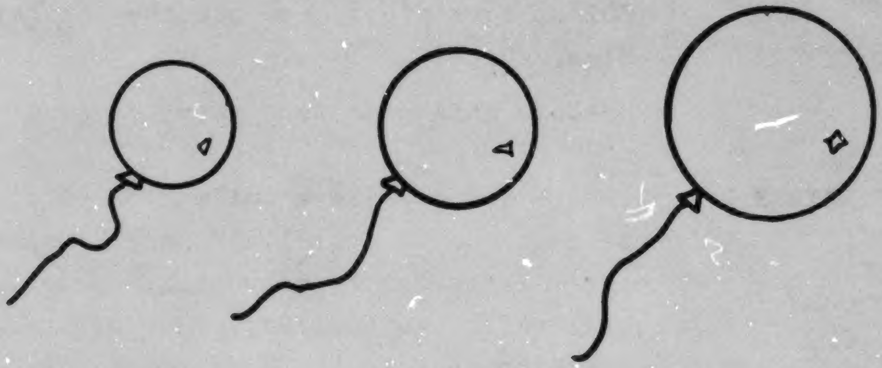
Continue this procedure.

1.01.03

1.01.03.02 **distinguish among the concepts of large, larger, and largest**

STRATEGY 1: Prepare a balloon and begin to inflate it. Show it to the class. Say, "This balloon is large. Watch what happens." Continue to inflate the balloon. Ask, "Is the balloon still the same size? What has happened to the balloon?" (It is larger.) Continue to inflate the balloon. Say, "This is the largest I can make this balloon." Draw three balloons of different sizes on the chalkboard.

e.g.,

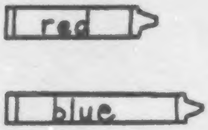


Point to the first balloon while saying, "This balloon is large." Point to the second balloon and ask, "Who can tell us about this balloon?" Point to the third balloon and ask, "What can we say about this balloon?"

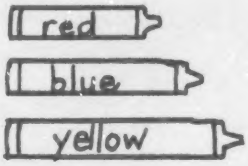
Point to the first balloon again. Ask, "Who can show us a balloon which is larger than this one?" Ask, "Who can show us which balloon is the largest?"

1.01.03

STRATEGY 2: Prepare and distribute a container of crayons to each group of students. Say, "Find a crayon that is large. Put it in front of you. Now find another crayon which is larger than that one. How can you tell which crayon is larger?" (Draw representative crayons on the chalkboard.)
e.g.,



Say, "Find the largest crayon. Put it next to the other crayons on your table. How can you tell that it is the largest?" (Draw a representation on the chalkboard.)
e.g.,



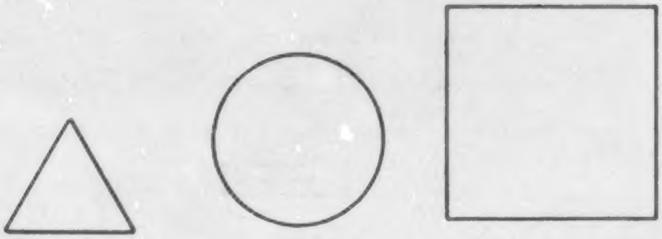
Say, "Look at your crayons. Pick up the large one. Pick up the larger one. Pick up the largest one. Let's sing about what we have learned.

Show us your large crayon.
Show us your larger one.
Now the largest one we see.
Count the crayons, count them all.
Count them, one, two, three!"

STRATEGY 2: cont'd

Distribute three items of varying size to each of the students, e.g., a triangle, a circle and a square.

e.g.,



Say, "Show us the shape which is the largest. Show us a shape which is larger than the triangle."

Repeat this procedure using other examples.

1.01.03.03 **distinguish among the concepts of small, smaller, and smallest**

STRATEGY 1: Prepare and distribute containers of different sized colored rods. Hold up a rod. Ask the students to find the same rod in their container. Say, "This rod is small. Who can find a smaller one? When you find it hold it up." (Any smaller rod is acceptable.)

Many comparisons can be made finding small rods and smaller ones. Say, "Put your small rod and the smaller rod in front of you. Now find the smallest rod in your box. Put it next to your other rods. Touch your small rod. Touch your smaller rod. Touch your smallest rod."

Ask the children to put all the rods back in the container and repeat the activity using a different starting rod.

STRATEGY 2: Prepare and distribute a paper circle and box of objects. Divide students into groups of four to six. Say, "We each have a small circle. Look in the box and find something which is smaller than the circle. Put it next to your circle. Can you find something in the box which will be the smallest object when you place it next to the two objects on your table?"

Ask the students to return all of their objects to the box, except the circle. Say, "Let's see if we can find other things which are smaller than the circle. Try to find something else which will be the smallest of all the objects."

Ask the students to return all of the objects to the box. Say, "I would like each of you to take something out of the box and put it on your table." Ask a student from each group to tell about his/her object. Say, "Which person at your table has something which is smaller? Look at all of the objects on the table. Who has the smallest one?"

Continue this procedure using other objects.

1.01.03.04 distinguish between likenesses and differences

STRATEGY 1: Say, "We are going to play a game called, 'Who Is It?' I will give you hints about someone in the room. See if you can guess who it is." Ask all of the students to stand in a circle. If the students do not fit your hint, they must sit down in their places. The student left standing is the one who is It. Say, "The person is a girl. She has short hair. She is wearing blue. How are all the people who are still standing alike? (They are all girls with short hair who are wearing blue.) Why is everyone else sitting?" Continue giving hints until one girl is left standing.

1.01.03

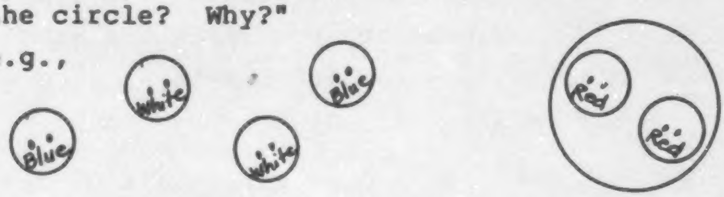
STRATEGY 1: cont'd

Repeat this procedure using other hints.

STRATEGY 2:

Prepare and distribute a collection of buttons varying in color, e.g., red, blue... and a large paper circle to each group of students. Ask the students to begin sorting the buttons by some attribute, e.g., color. Say, "Put all your red buttons on your circle." Hold up a blue button. Ask, "Does it belong inside the circle or outside the circle? Why?"

e.g.,



Continue this procedure using other colors and then other attributes.

1.01.03.05 **solve oral story problems using the skills learned in this module**

STRATEGY 1:

Prepare and display a flannelboard and three different sized felt cutouts of related objects; e.g., dolls, chairs, carriages, rattles,...

Say, "These dolls are feeling very unhappy today. All of their belongings have been mixed up. Let's help each one find the chairs, rattles, carriages ... that belong to each one." Discuss why each doll gets a different sized object. (The smallest doll gets the smallest rattle, the smallest carriage ...)

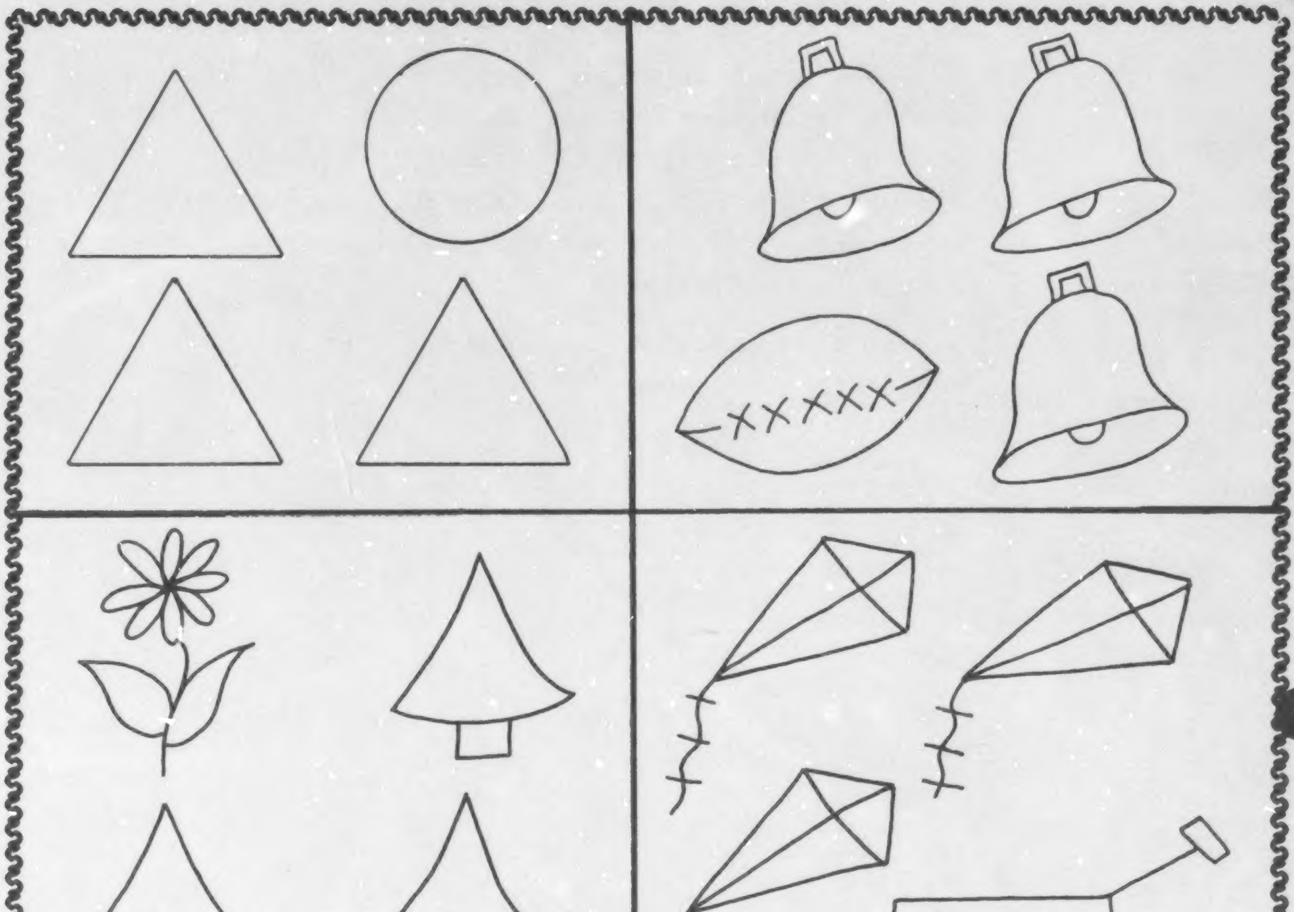
STRATEGY 2: Display and have students identify pictures of vehicles, e.g., a tricycle, motorcycle, car, bus. Say, "It is John's birthday. He wants a bus, an airplane and a ship. He does not want roller skates, a boat, a motorcycle or a tricycle." Ask a student to separate the pictures into the appropriate groups. Say, "Why do you think John wants these vehicles and not the others?" (larger, carries more people)

Repeat this procedure using the pictures to create other story problems.

P.O. 1.01.03.01

NAME: ______________________________ CLASS: ________ DATE: ________

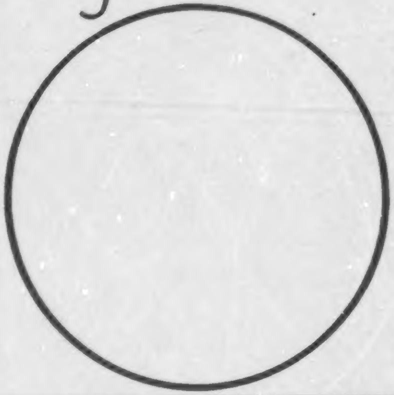
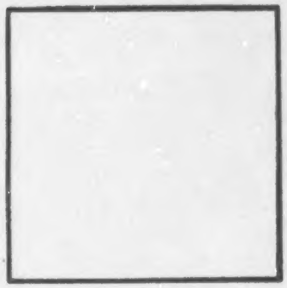
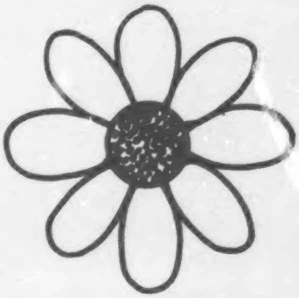
Put an X on the object which is different from the others.



P.O. 1.01.03.02

NAME: ______________________ CLASS: ________ DATE: ______

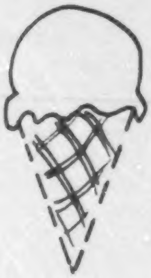
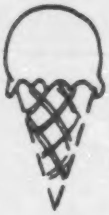
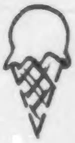
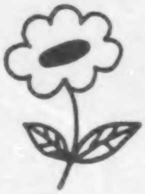
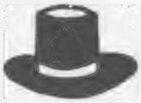
Read the words. Draw pictures of the correct size.

large 	larger 	largest 
large 	larger	largest
large 	larger	largest

P.O. 1.01.03.03

NAME: ______________________ CLASS: __________ DATE: ________

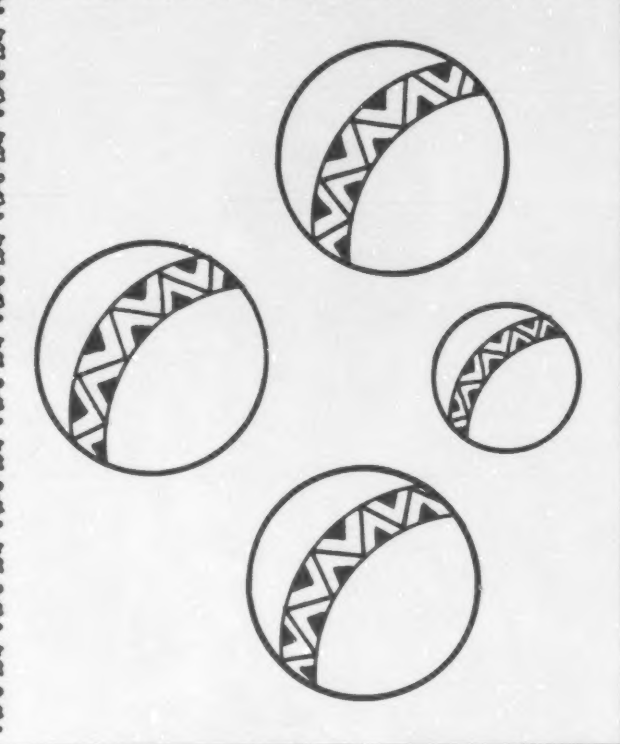
Read the words in each box.
Make flowers. Make hats.

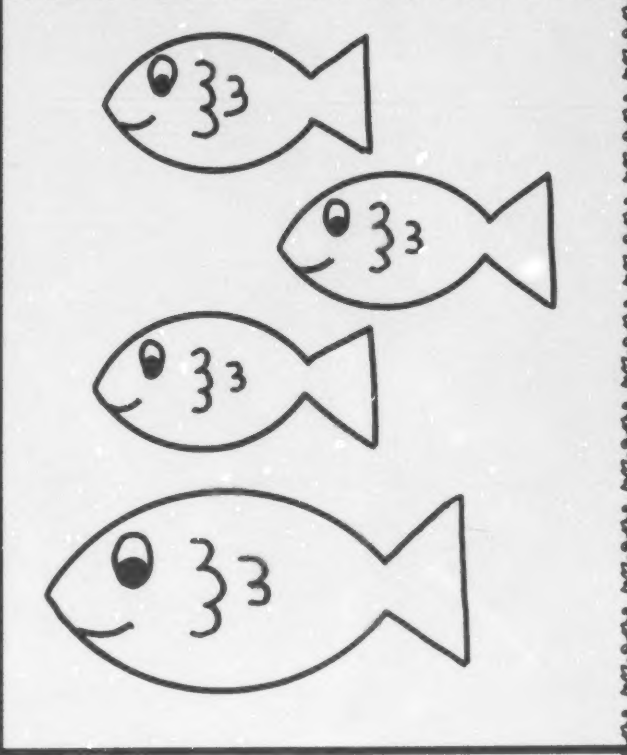
small 	smaller 	smallest 
small	smaller 	smallest
small	smaller	smallest 

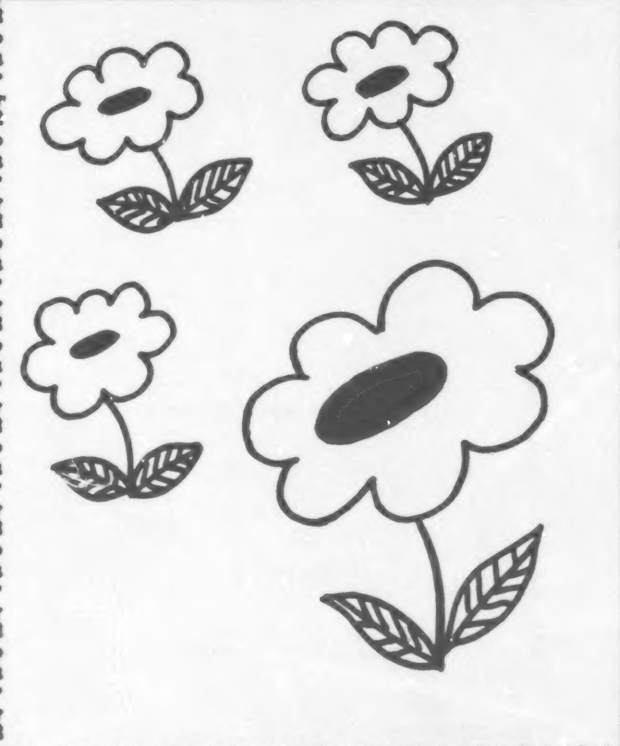
P.O. 1.01.03.04

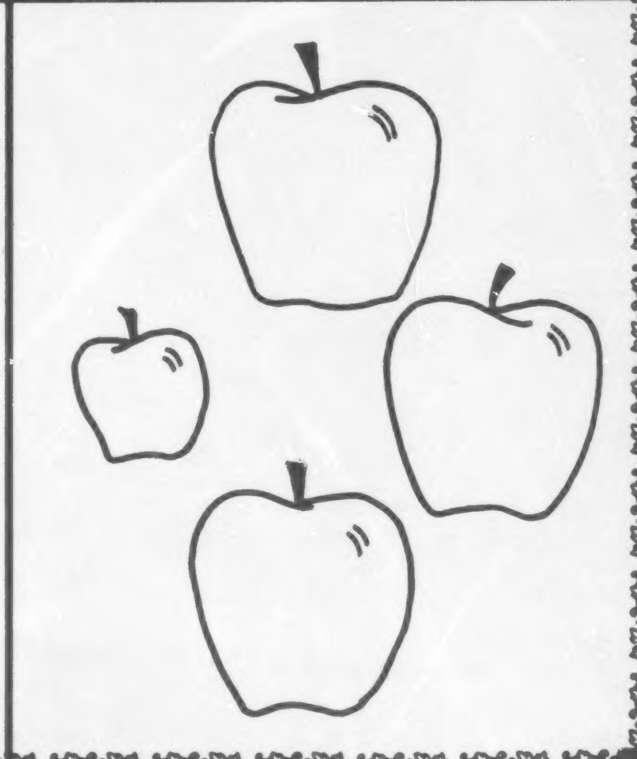
NAME:____ CLASS:__________ DATE:________

Put an X on the object which is different.
Tell why it is different.







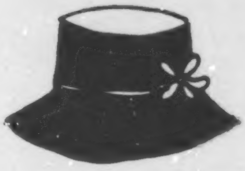


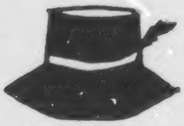
P.O. 1.01.03.05

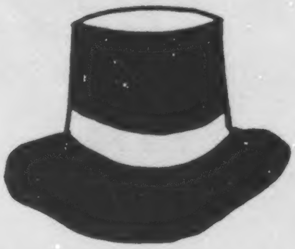
NAME: ______________________ CLASS: ________ DATE: ________

Circle the correct answer.

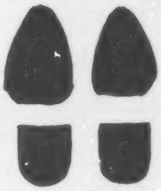
Which 🎩 belongs to Father?

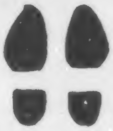


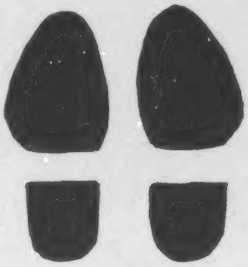




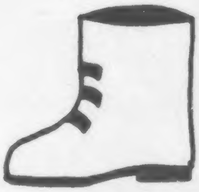
Which 👣 belong to a little boy?

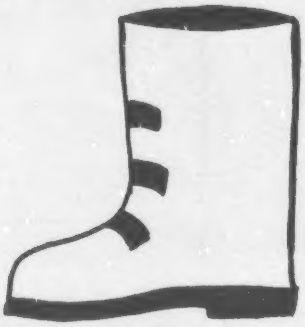


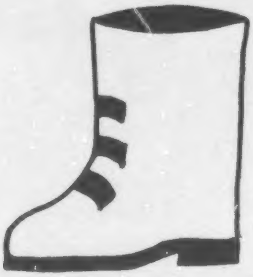




Which 👢 belongs to Mother?







1.01.04 ONE-TO-ONE AND MORE THAN ONE CORRESPONDENCE

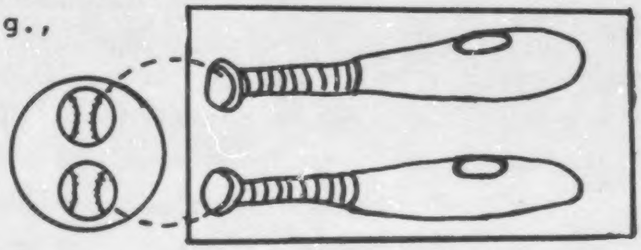
(ongoing)

PERFORMANCE OBJECTIVES

The student will be able to...

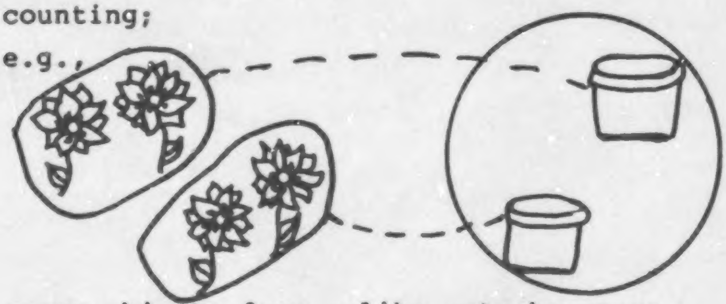
1.01.04.01A pair objects from unlike sets by means of a one-to-one correspondence without counting;

e.g.,



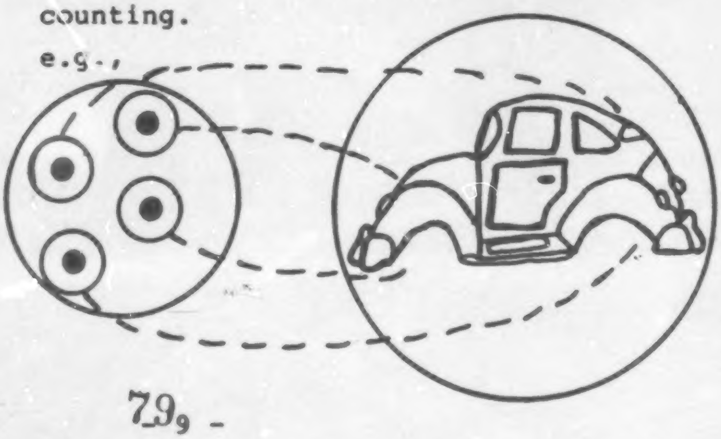
1.01.04.02A group objects from unlike sets by means of a two-to-one correspondence without counting;

e.g.,



1.01.04.03A group objects from unlike sets by means of a many-to-one correspondence without counting.

e.g.,



1.01.04

VOCABULARY

TERMS

match
unlike
like

GETTING STARTED

Use classroom routines to involve the students in matching one-to-one, e.g. one coat hook for each coat, one chair for each student, one desk for each student.

Prepare paper cups, napkins, straws, construction paper placemats, juice and cookies. Seat the students in groups of four or six. Ask one student in each group to count his tablemates and come forward and take enough placemats for each student. Ask a different student to get the paper cups. Continue this procedure to distribute the napkins, straws and cookies. Say, "Does everyone have a placemat? Does everyone have a cup? Do we have the same number of cups as children? How do we know? Do we have the same number of cookies and students? Do we have enough straws for each student? How can you tell?"

80

1.01.04

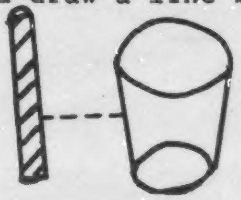
1.01.04.01 **pair objects from unlike sets by means of a one-to-one correspondence without counting**

STRATEGY 1: Distribute containers and lids to each student. Say, "I would like you to put a lid on each of your containers." When the task has been completed, ask, "Did you have enough lids for each container? Does every container have a lid on it?" Say, "There is a lid for each container. Each container has one lid."

STRATEGY 2: Prepare and distribute a paper cup and straw to each student. Arrange the students into groups of four to six. Say, "Take your cup and put it in front of you. Now take a straw, remove the wrapper and place it inside your cup. Does everyone have a cup? Does everyone have a straw inside your cup? Is there anyone without a cup? Is there anyone without a straw? Are there any cups left over? Are there any straws left over? There is one cup for each student. Each cup has one straw."

Draw a picture of a cup and a straw on the chalkboard, and draw a line between the cup and the straw.

e.g.,



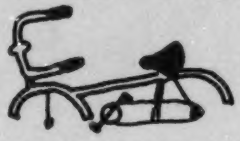
Say, "I have drawn a line to show that this cup has a straw." Draw several more cups and straws on the chalkboard. Ask several students to go to the chalkboard and draw a line to match one cup with one straw. Pour fruit juice into each cup and let the students drink it through their straws.

1.01.04

1.01.04.02 **group objects from unlike sets by means of a two-to-one correspondence without counting**

STRATEGY 1: Prepare and display pictures of bicycles, without wheels, on the chalkboard. Ask, "What do these pictures show? Is there anything missing? What is missing? How many wheels does each bicycle need?" Display a box containing magnetized discs. Ask a student to go to the chalkboard and take enough discs to be used as wheels for one bicycle.

e.g.,

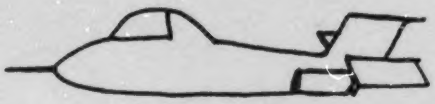


Ask, "How many discs did you take?" (Two.)

Continue this procedure until all of the bicycles have two wheels.

STRATEGY 2: Prepare and distribute crayons and incomplete pictures of the following: a motorcycle without wheels, a dog without ears, an airplane without wings, and a doll without eyes.

e.g.,



Discuss the parts which are missing. Say, "Yes, the wheels are missing from the motorcycle. Draw two windows on your house. Repeat this procedure with the other pictures.

1.01.04

1.01.04.03 **group objects from unlike sets by means of a many-to-one correspondence without counting**

STRATEGY 1: Prepare green plastic fruit baskets or empty milk containers, groups of zoo animals cut from cardboard or plastic animals. Say, "Today we are going to pretend to be zookeepers. How many students have ever visited the zoo? Where do the animals live? (In cages.) The animals are moving to a new zoo today. We are going to put them in the cages." Distribute cages and animals to each group of students and ask them to set up the zoo, e.g., place all the bears in one cage. Say, "What did we do? Did we put many animals in each cage?" Sing a song about the zoo. e.g., Tom Glazer's "Daddy's Taking Me to the Zoo."

STRATEGY 2: Display sets of objects which come in containers, e.g., eggs, crayons, chalk, gum. Empty each of the containers on a table (use plastic eggs and empty gum wrappers). Ask the students to sort the items into their proper containers.

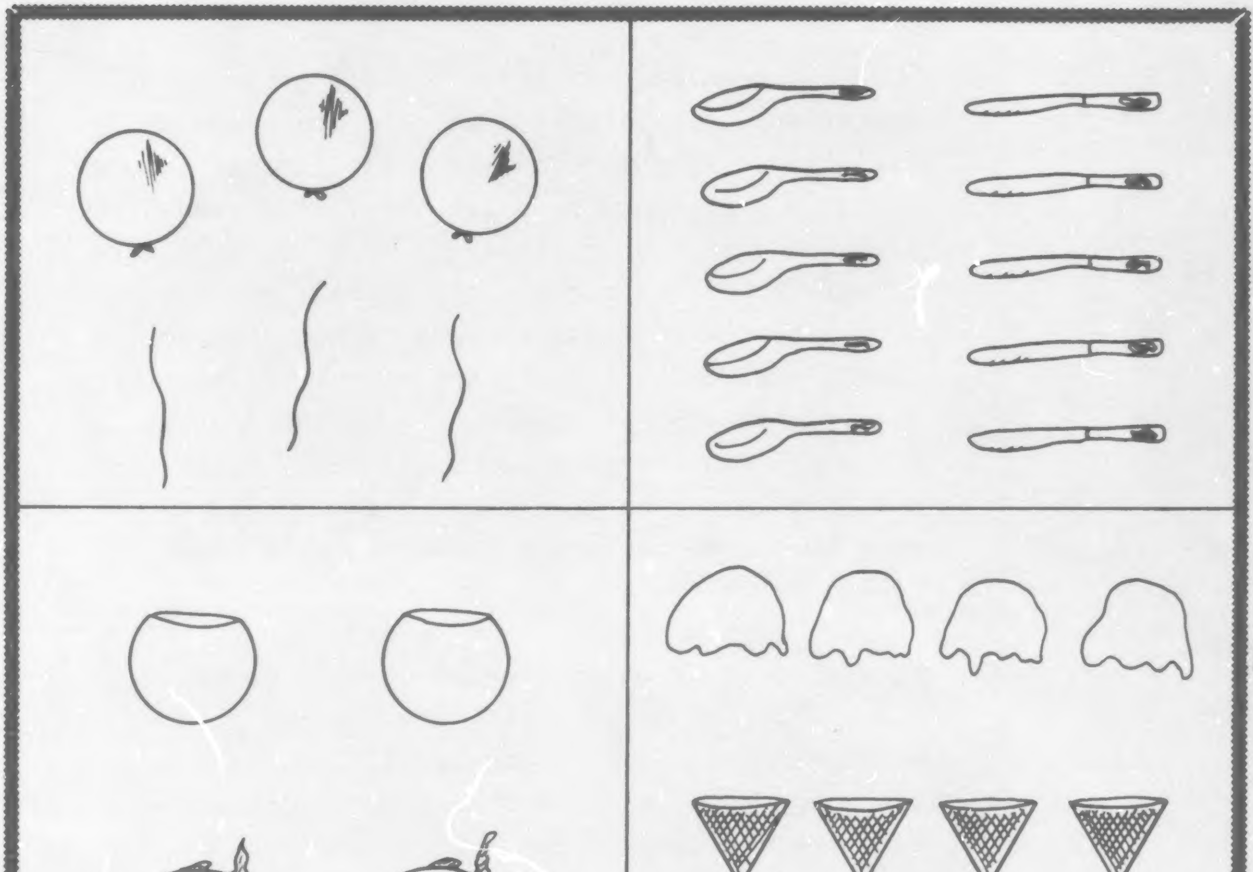
Say, "Each container has many objects in it. How do we know that each container has all it can hold?" Display the egg carton. Say, "Can we fit any more eggs in it? Why or why not?"

Continue this procedure using the other containers. Say, "Each of these containers holds many objects. We can see that all the containers have as many objects as they can hold because they are full. There is no room left in any of the containers."

P.O. 1.01.04.01

NAME:____ CLASS:_________ DATE:________

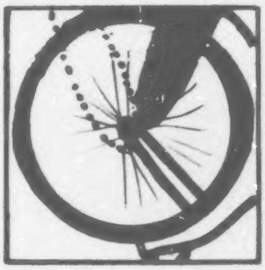
Draw a line to match sets.

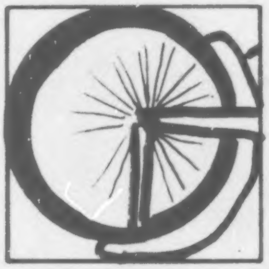


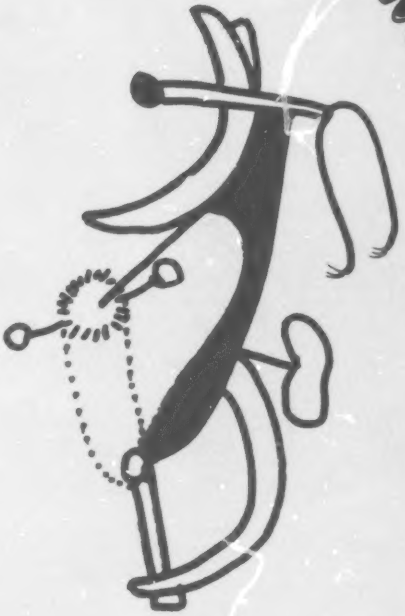
P.O. 1.01.04.02

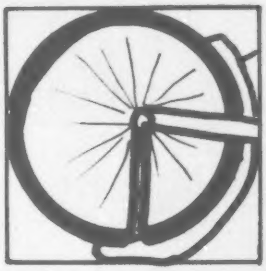
NAME: ____________________ CLASS: __________ DATE: ________

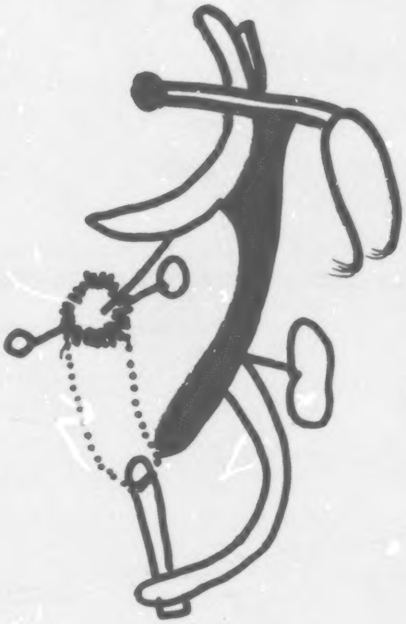
Paste 2 wheels on each bicycle.

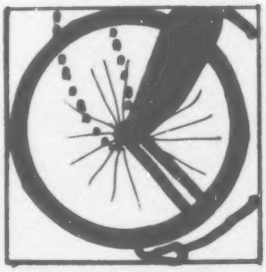


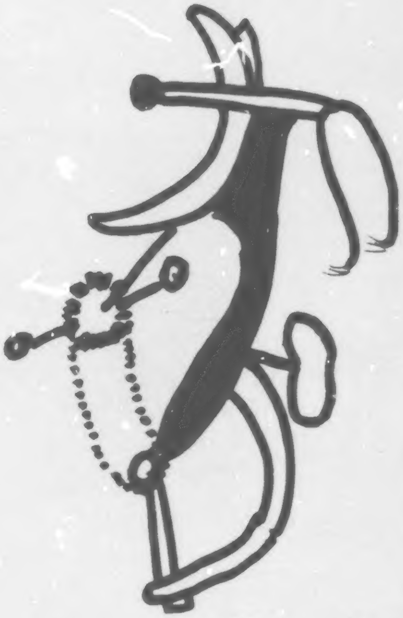


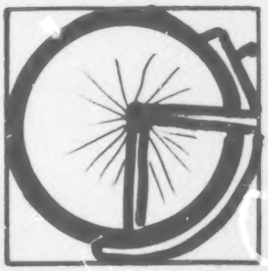


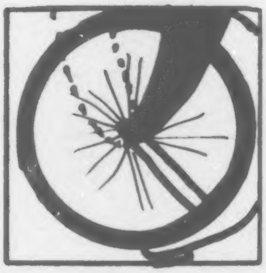








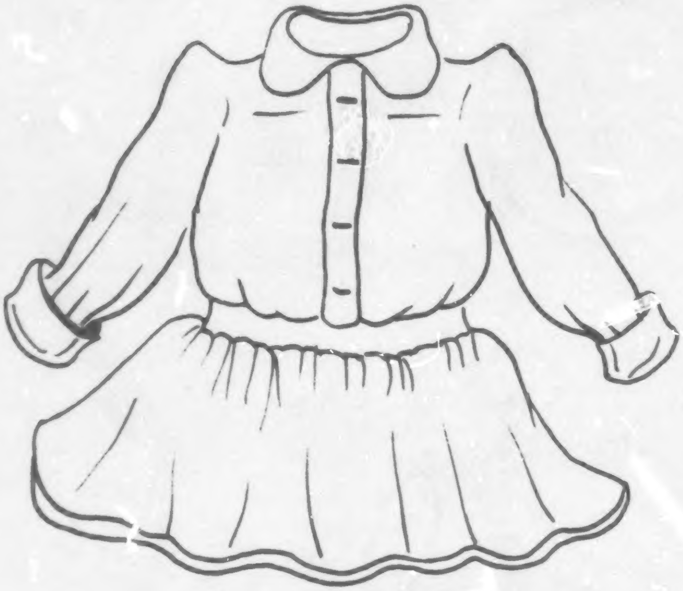


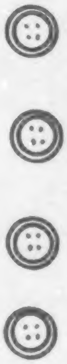


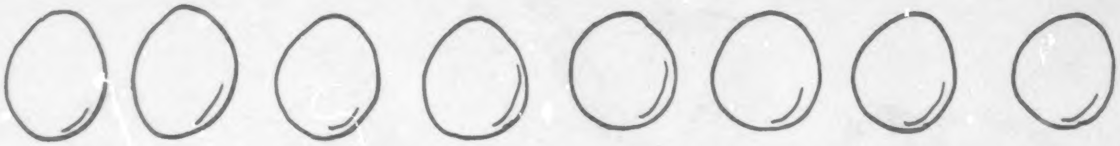
P.O. 1.01.04.03

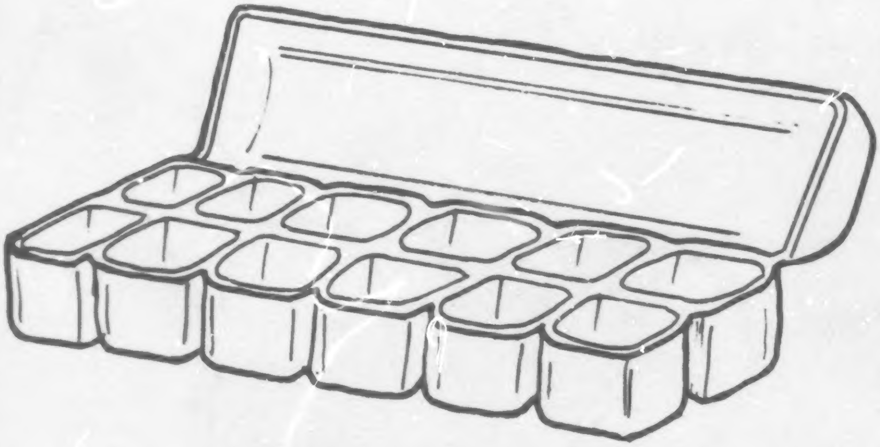
NAME: ______________________ CLASS: ________ DATE: ________

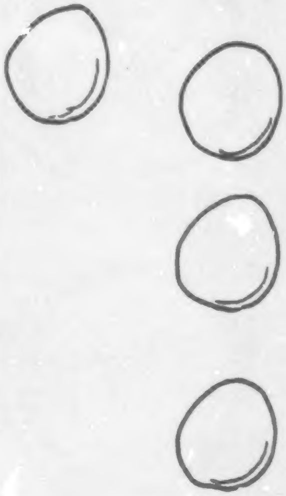
Match the buttons to the shirt.
Match the eggs to the carton.











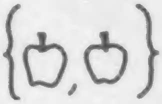
1.01.05 SETS

(1 lesson)

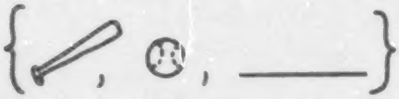
PERFORMANCE OBJECTIVES

The student will be able to...

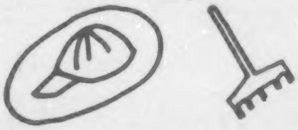
1.01.05.01B identify a set as a collection or group of objects;
e.g.,



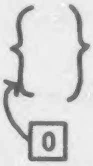
1.01.05.02B identify the members of a set determined by a specific characteristic;
e.g.,
This is a set of baseball objects.



Which of the objects below belong in this set?



1.01.05.03B identify the empty set.



1.01.05

VOCABULARY

TERMS

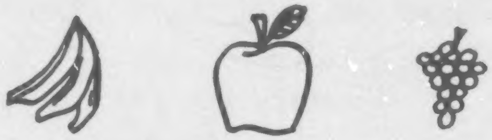
group
empty
set
members

GETTING STARTED

Prepare a flannelboard and the following cut-outs: a boy, a girl, two raincoats, two rainhats, and two umbrellas. Say, "Today it is raining outside. Maria and James are ready to go to school. Before they go outside they will have to put on their rain clothes. What will Maria need? What will James need?" (one raincoat, one rainhat, and one umbrella). Ask a student to place the appropriate item on each doll.

Divide the students into groups of five or six. Prepare and distribute old magazines, scissors, paste and a large sheet of construction paper to each group. Assign a specific category to each group, e.g., food, people, furniture, vehicles, etc. Ask the students to find objects within that category, cut them out and paste them on the paper. Label the paper.

e.g.,



This is a group of fruit.

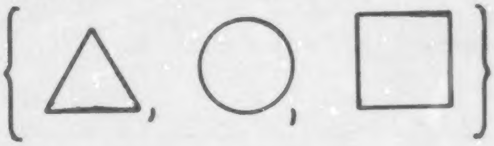
1.01.05

1.01.05.01 identify a set as a collection or group of objects

STRATEGY 1: Prepare pictures of various objects, e.g., toys, fruits, tools, ... Back each object with tape. Hold up a pencil, a notebook, and an eraser. Say, "These objects are found in the classroom. We can call these three objects a group or a set of objects found in the classroom." Ask the students to identify other sets, e.g., a set of numbers, a set of animals, a set of vehicles.

Draw the following shapes on the chalkboard.

e.g.,



Say, "This is a set or a group of shapes. The brackets are used to identify the members of a set." Ask individual students to come up to the chalkboard and make sets using the pictures provided. Allow the students to practice making brackets around each set of objects.

STRATEGY 2: Prepare and display a flannel board, a set of flannel board cutout brackets and pictures. Say, "Who can make a set of five objects?" Ask a student to put up the brackets and place any five pictures within them. The other students should draw brackets in their notebooks and the corresponding number of circles for the number of objects chosen.

Repeat this procedure asking for a different number of members within each set.

1.01.05

1.01.05.02 identify the members of a set determined by a specific characteristic

STRATEGY 1: Prepare various sets of pictures, e.g., three baseball objects, three fruits, three vehicles... and two oaktag brackets. Back the objects with tape. Place all of the pictures on the ledge of the chalkboard. Tape any two pictures from the same category, e.g., a bus and a car, to the chalkboard and say, "Who can find another object that goes with the set of vehicles? Brackets are needed to complete the set."

Repeat this procedure.

STRATEGY 2: Prepare and distribute a rexographed sheet of pictures of various sets of objects, e.g., vehicles, shapes, numbers..., two pipe cleaners and scissors. Choose two classroom objects, e.g., a pencil and a crayon. Say, "These objects are used for writing. What other object can you find in the classroom that we could put into this set?" (chalk) Bend the pipe cleaners as brackets to complete the set.

Ask the students to cut out the pictures on the rexographed sheet and make a set, e.g., a set of vehicles. Pipe cleaners should be used as brackets.

Continue this procedure until various sets have been made.

1.01.05

1.01.05.03 **identify the empty set**

STRATEGY 1: Draw two sets of brackets on the chalkboard. Draw a set of fruits in one of the brackets, and leave the other brackets empty. Say, "One set has no objects in it. We call this set the empty set, since nothing is in it."

Repeat this procedure with other pictures.

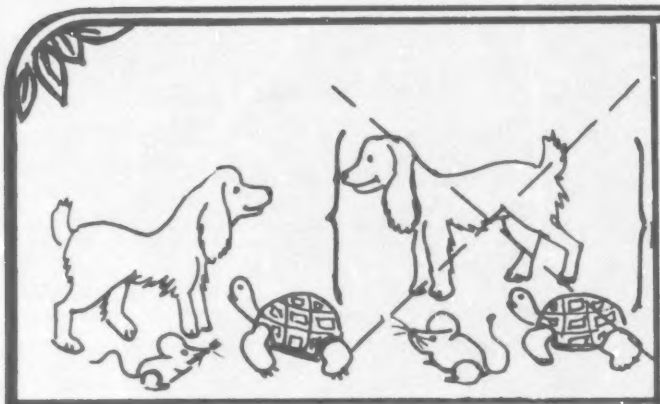
STRATEGY 2: Draw a set of four similar objects, e.g., apples, on the chalkboard. Say, "Tony has four apples. He gave one apple to Maria." Erase one apple. Continue this procedure, removing apples one at a time until no apples appear in the set. Say, "We have no apples left in this set. We call this the empty set."

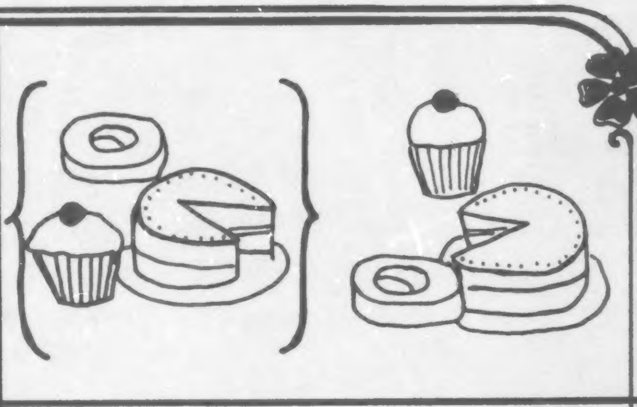
Repeat this procedure with other sets of objects. Ask the students to do this activity in their notebooks. They should draw circles to represent each object.

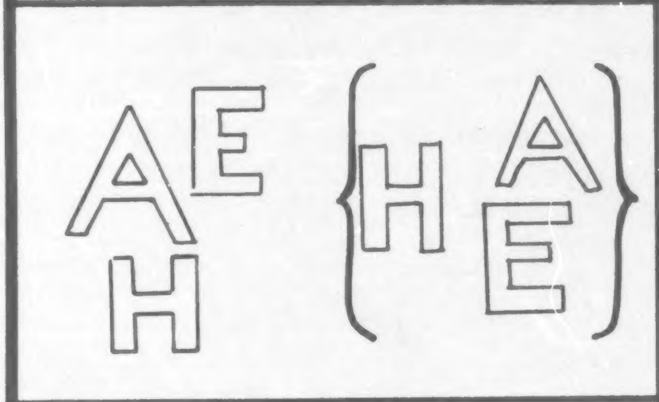
P.O. 1.01.05.01

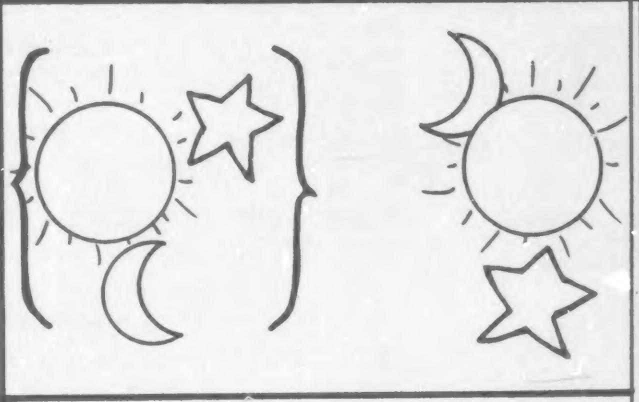
NAME: ______________________ CLASS: ________ DATE: ______

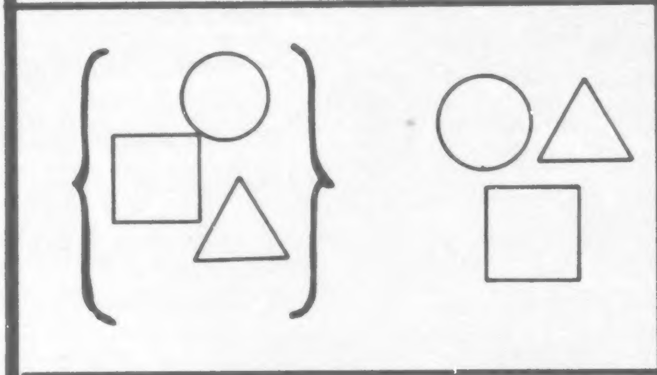
Put an X on the set in each box.

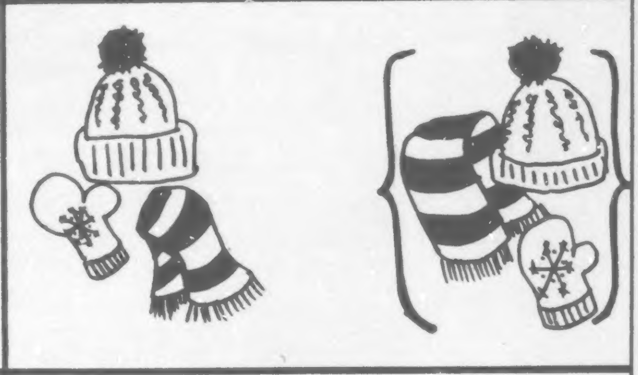


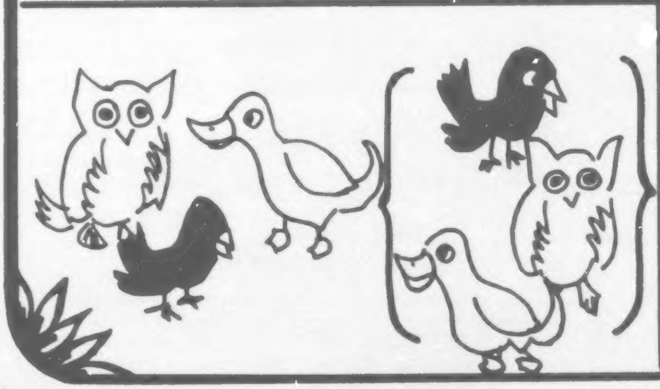


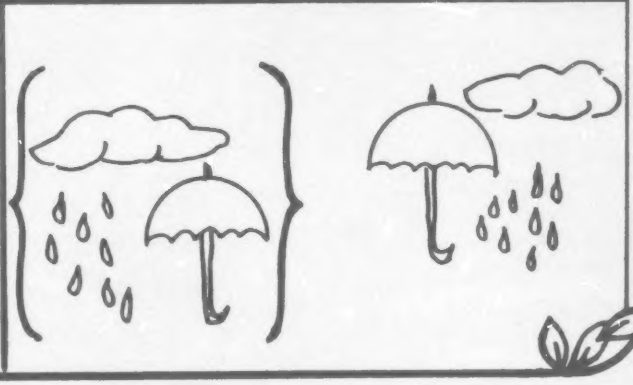








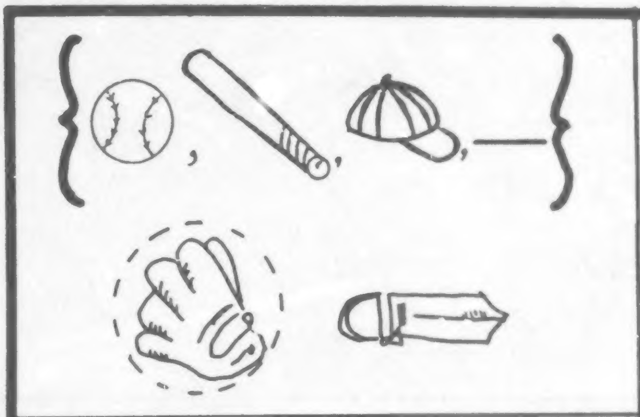


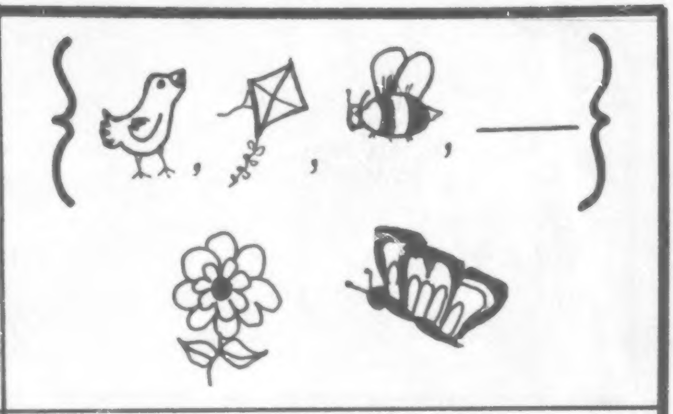


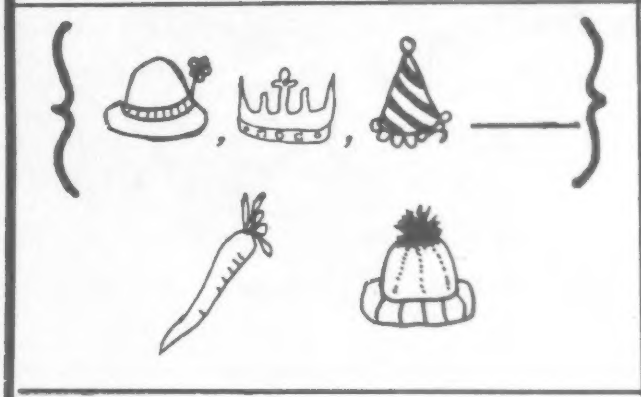
P.O. 1.01.05.02

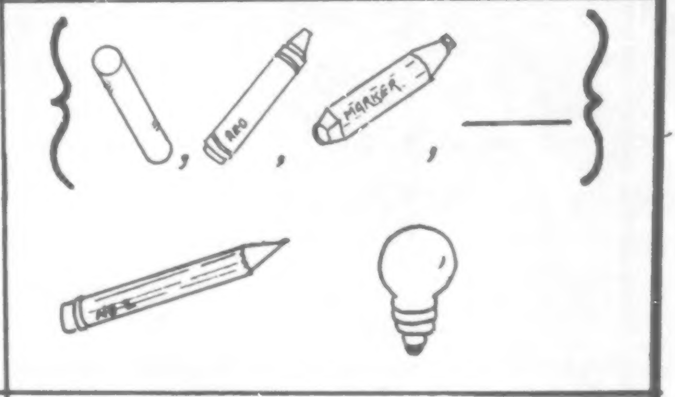
NAME:____CLASS:__________DATE:_____

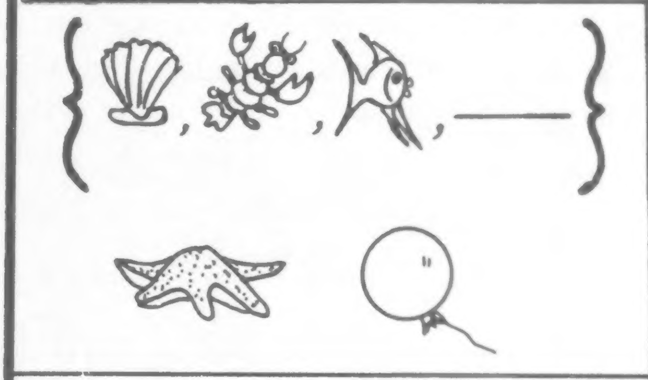
Circle the object which belongs in each set.

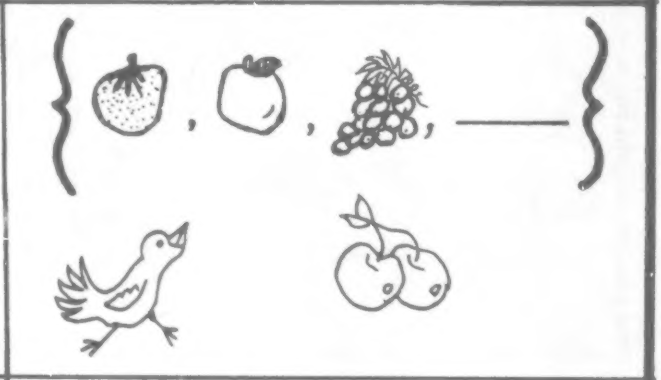


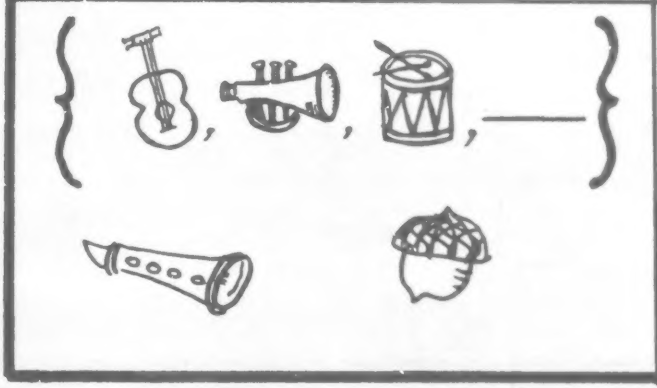


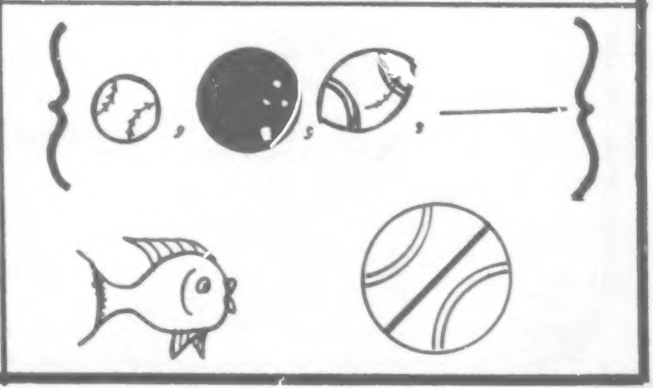








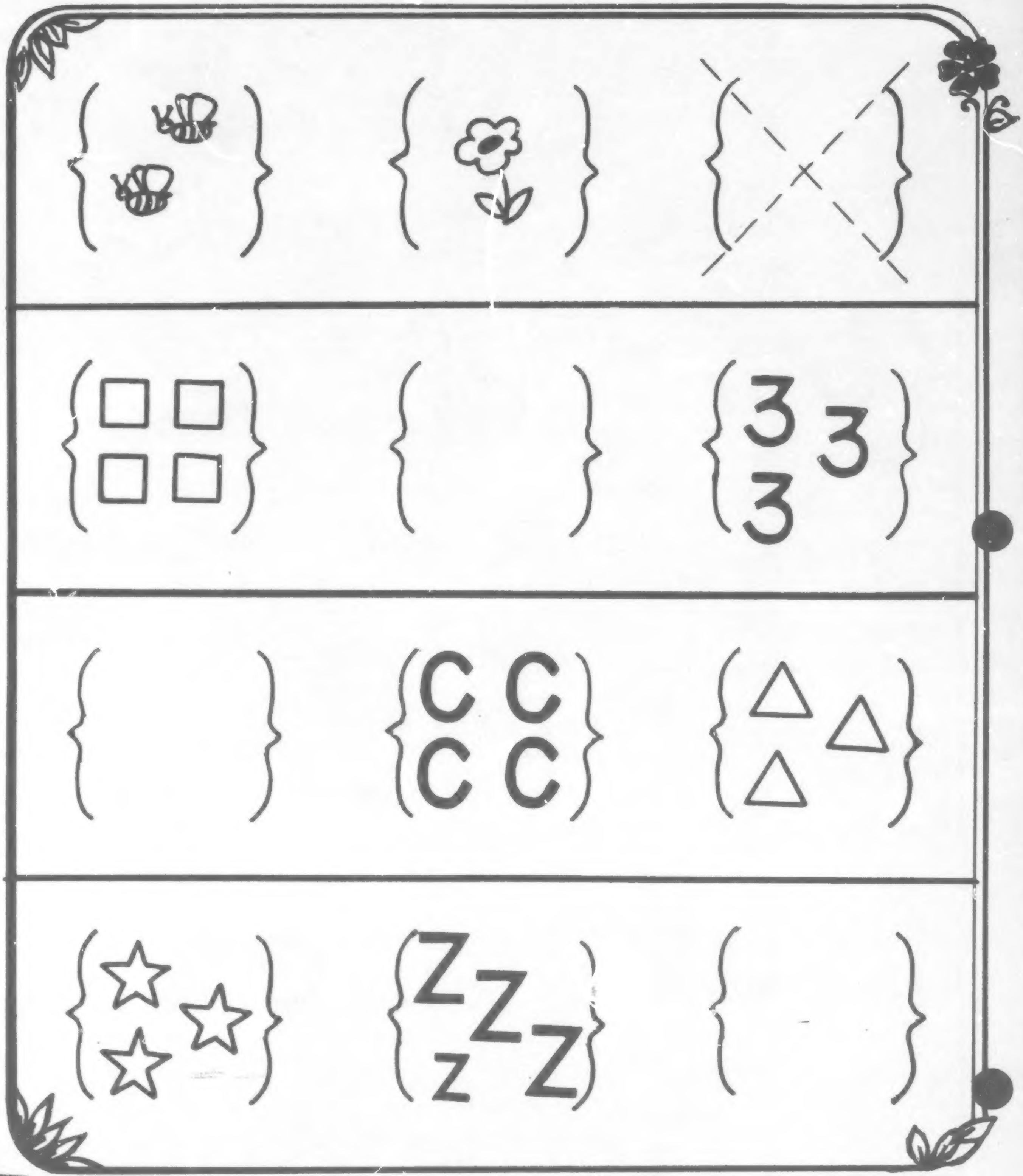




P.O. 1.01.05.03

NAME: ______________________ **CLASS:** ________ **DATE:** ________

Put an X on the empty set.


3 3
3
C C
C C
Z
Z
z Z

Unit 8

1.01.06 COMPARE GROUPS OF 1 THROUGH 5 OBJECTS

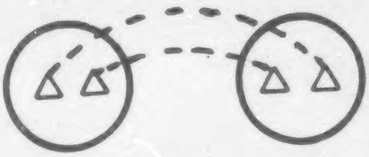
(2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

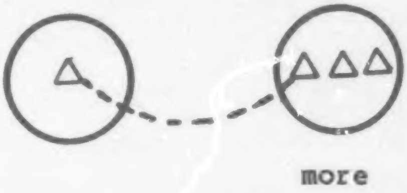
1.01.06.01A compare groups (sets, bunches, lots, heaps, piles) of 1 through 5 objects by matching and showing which have the same number of objects;

e.g.,



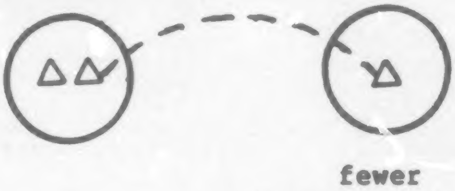
1.01.06.02A compare groups of 1 through 5 objects by matching and showing which have more objects when given two groups of objects;

e.g.,



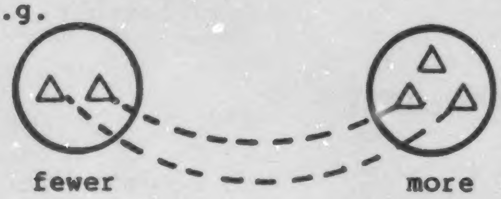
1.01.06.03A compare groups of 1 through 5 objects by matching and showing which have fewer objects, when given two groups of objects;

e.g.,



1.01.06.04A compare groups of 1 through 5 objects by matching and showing "more" and "fewer" when given two groups of objects.

e.g.



1.01.06

VOCABULARY

TERMS

fewer
more
same

GETTING STARTED

Prepare and distribute sets of attribute blocks and trays labeled Size, Shape and Color to small groups of students. Hold up a blue block and say, "Look at your blocks. Find all of the blocks that are the same color as the one I am holding. Put these blocks on the tray marked color." Ask students to return the blocks to the original group. Repeat this procedure having students sort the attribute blocks according to size, shape, and color.

Prepare flannel cutouts, e.g., apples and baskets, birds and nests, and a flannelboard. Display the baskets and the apples in separate groups on the flannelboard. Ask a student to match an apple to each basket. Say, "Does every basket have an apple? We have one apple in every basket."

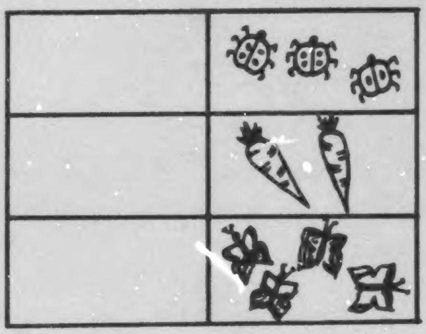
Repeat this procedure with the other cutouts.

1.01.06

1.01.06.01 **compare groups (sets, bunches, lots, heaps, piles) of 1 through 5 objects by matching and showing which have the same number of objects**

STRATEGY 1: Prepare and distribute cards with one through five spots and five interlocking cubes to each student. Say, "Place one spot card on your desk. Match each spot with a cube. Cover each spot with a cube. Do you have enough cubes to match all the spots on the card? You have the same number of cubes as you have spots. They match." Continue this procedure using other cards.

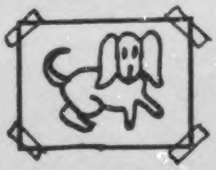
STRATEGY 2: Prepare and distribute an oaktag card having three groups of pictures showing 1 through 5 objects and 1 blank column.
e.g.,

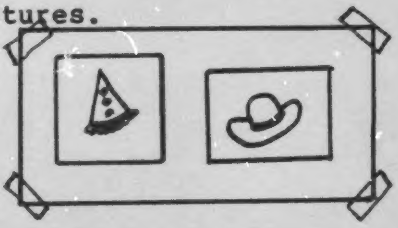


Ask the students to draw the same number of objects as those shown in the picture.

1.01.06.02 **compare groups of 1 through 5 objects by matching and showing which have more objects when given groups of objects**

STRATEGY 1: Prepare and tape two groups of pictures on the chalkboard. One group should contain one picture and the second group two pictures.
e.g.,



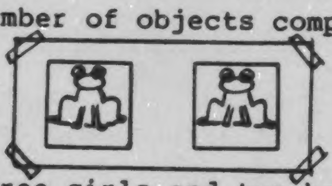


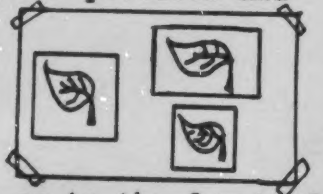
1.01.06

STRATEGY 1: cont'd Say, "Who would like to go to the chalkboard and draw a line giving the dog a hat? Do we have more hats or more dogs? How do we know?"

Repeat this procedure, changing the pictures and the number of objects compared.

e.g.,





STRATEGY 2: Ask three girls and two boys to go to the front of the room. Ask another student to match each boy with a girl partner. Say, "Are there more girls than boys? How do we know?" (Yes, because Judy does not have a boy partner.)

Repeat this procedure, varying the number of boys and girls.

1.01.06.03 **compare groups of 1 through 5 objects by matching and showing fewer objects, when given two groups of objects**

STRATEGY 1: Prepare and display two rows of interlocking cubes, one having 6 red cubes and the other having 8 blue cubes. Place them on a table so that the first cubes in each row are side by side. Say "Which row has fewer cubes? Which row has more cubes? How can we tell? (We matched them to each other.) The row which has cubes that cannot be matched has more. The row which has all the cubes matched has fewer."

Distribute cubes to the students and have each child make an interlocking row of cubes. Say, "Place your cubes next to your partner's cubes. Tell which has more. Tell which has fewer."

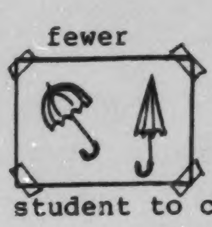
1.01.06

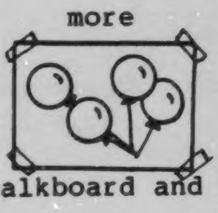
STRATEGY 2: Use the spot cards prepared for strategy 1 of P.O.1.01.06.01. Hold up two cards. Ask a student to choose the card which has fewer spots.

Continue this procedure.

1.01.06.04 **compare groups of 1 through 5 objects by matching and showing "more" and "fewer", when given two groups of objects**

STRATEGY 1: Prepare cards backed with tape, with pictures of 1 through 5 objects. Write "fewer" and "more" on the chalkboard and display two cards on the chalkboard.
e.g.,

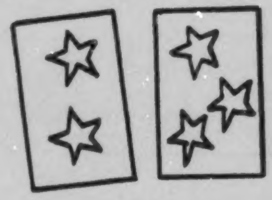




Ask a student to come to the chalkboard and place the cards in the correct column.

Repeat this procedure, varying the pictures.

STRATEGY 2: Prepare two sets of picture cards with 1 through 5 objects.
e.g.,



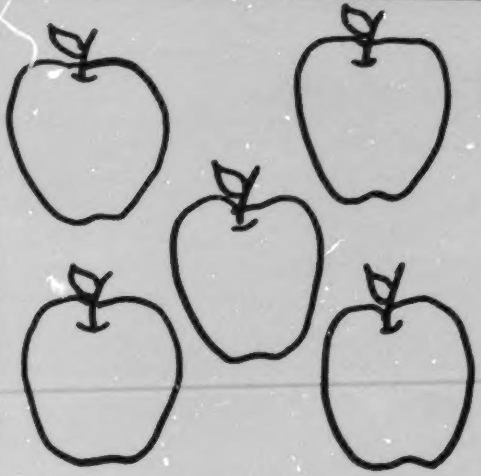
Display two cards. Say, "Who can find the card which has more stars? Put the card back. Who can find the card that has fewer stars? Put the card back."

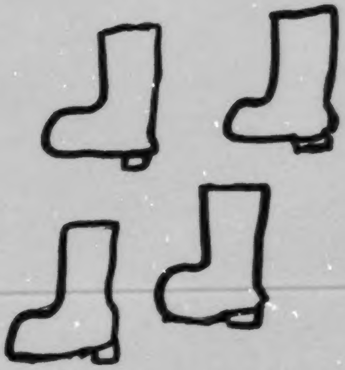
Repeat this procedure, varying the pictures and the numbers being compared.

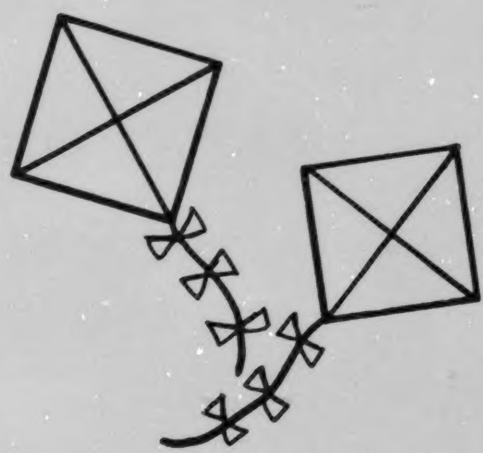
P.O. 1.01.06.01

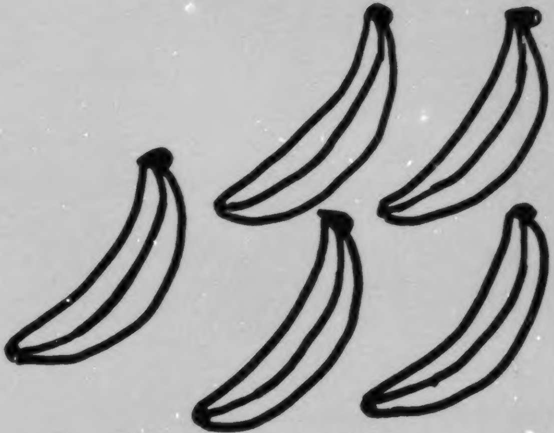
NAME:______________________________ CLASS:__________ DATE:________

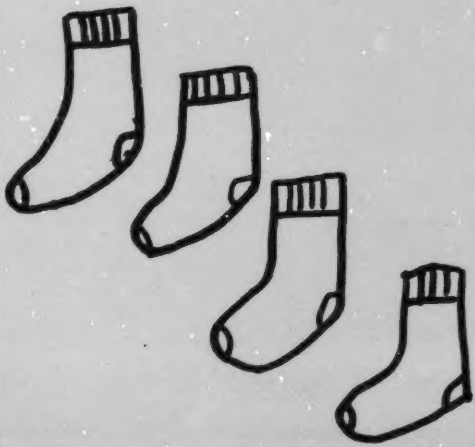
Match the groups with the same number of objects.

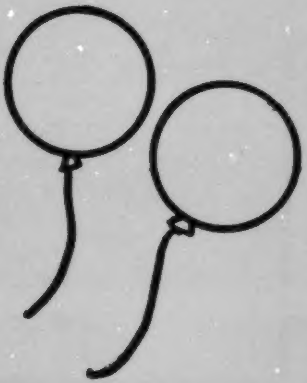








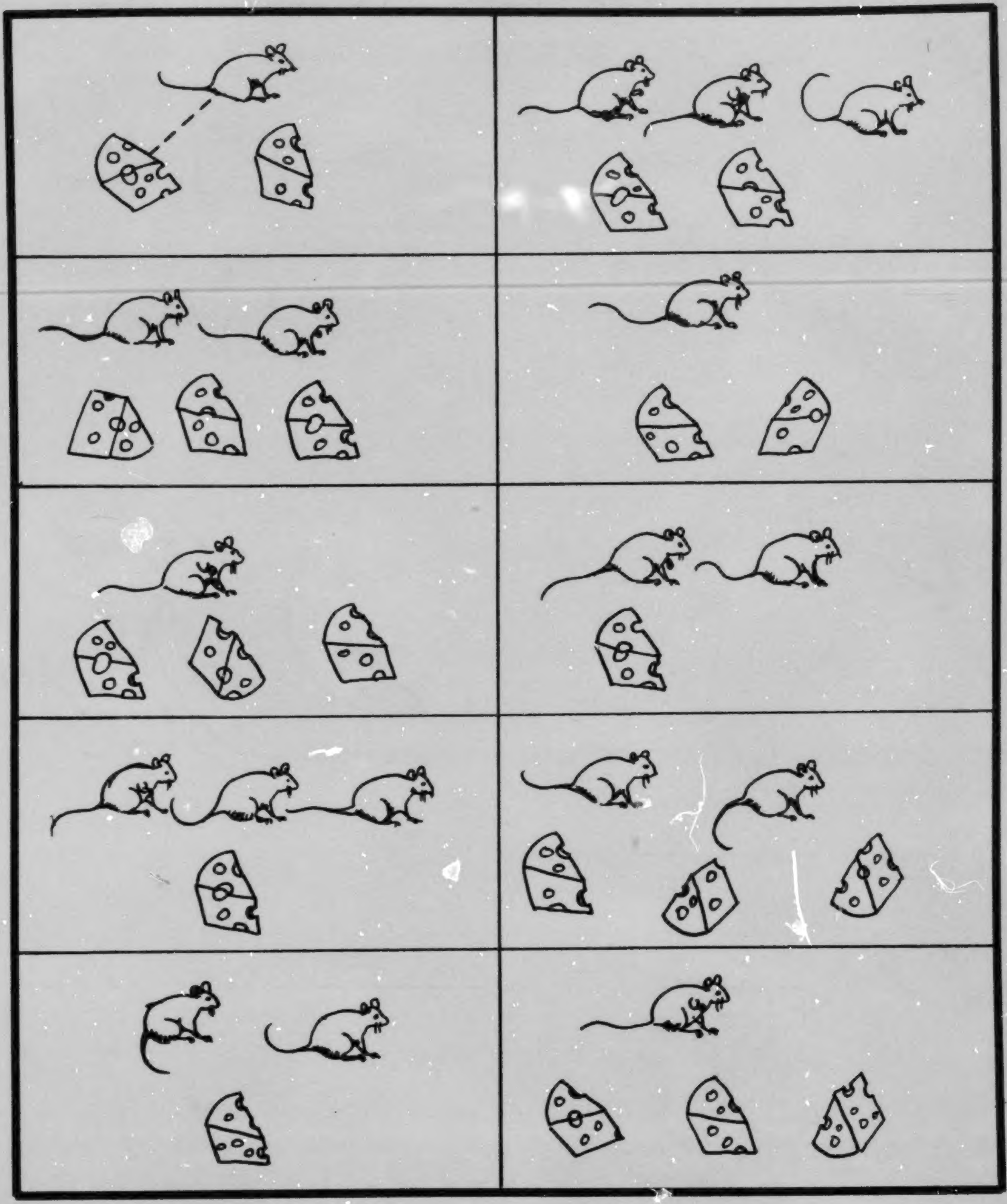




P.O. 1.01.06.02

NAME: ______________________ CLASS: __________ DATE: ________

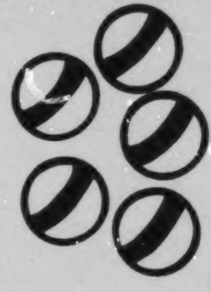
Match each mouse to a piece of cheese.
Color the group that shows more.

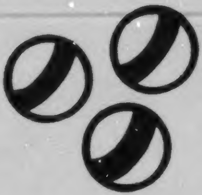


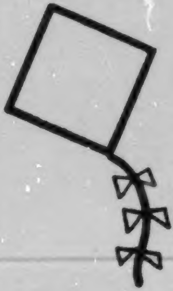
P.O. 1.01.06.03

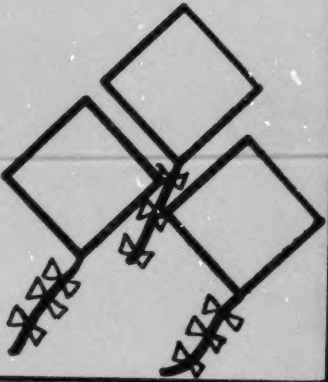
NAME:____ CLASS:__________ DATE:________

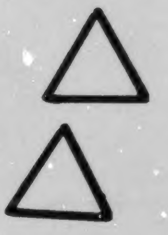
Circle the group with fewer objects.

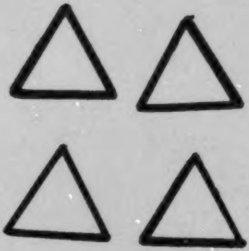


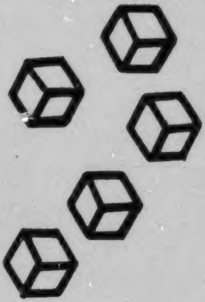


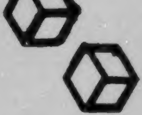


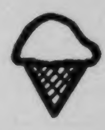


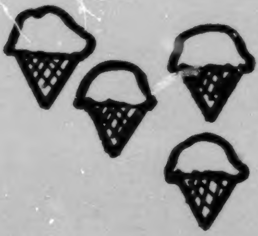


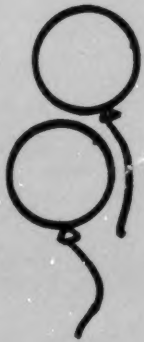


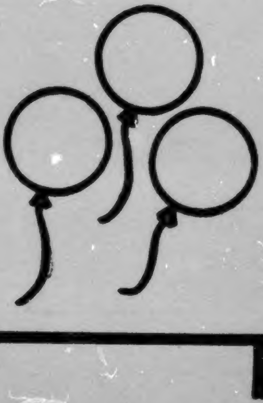








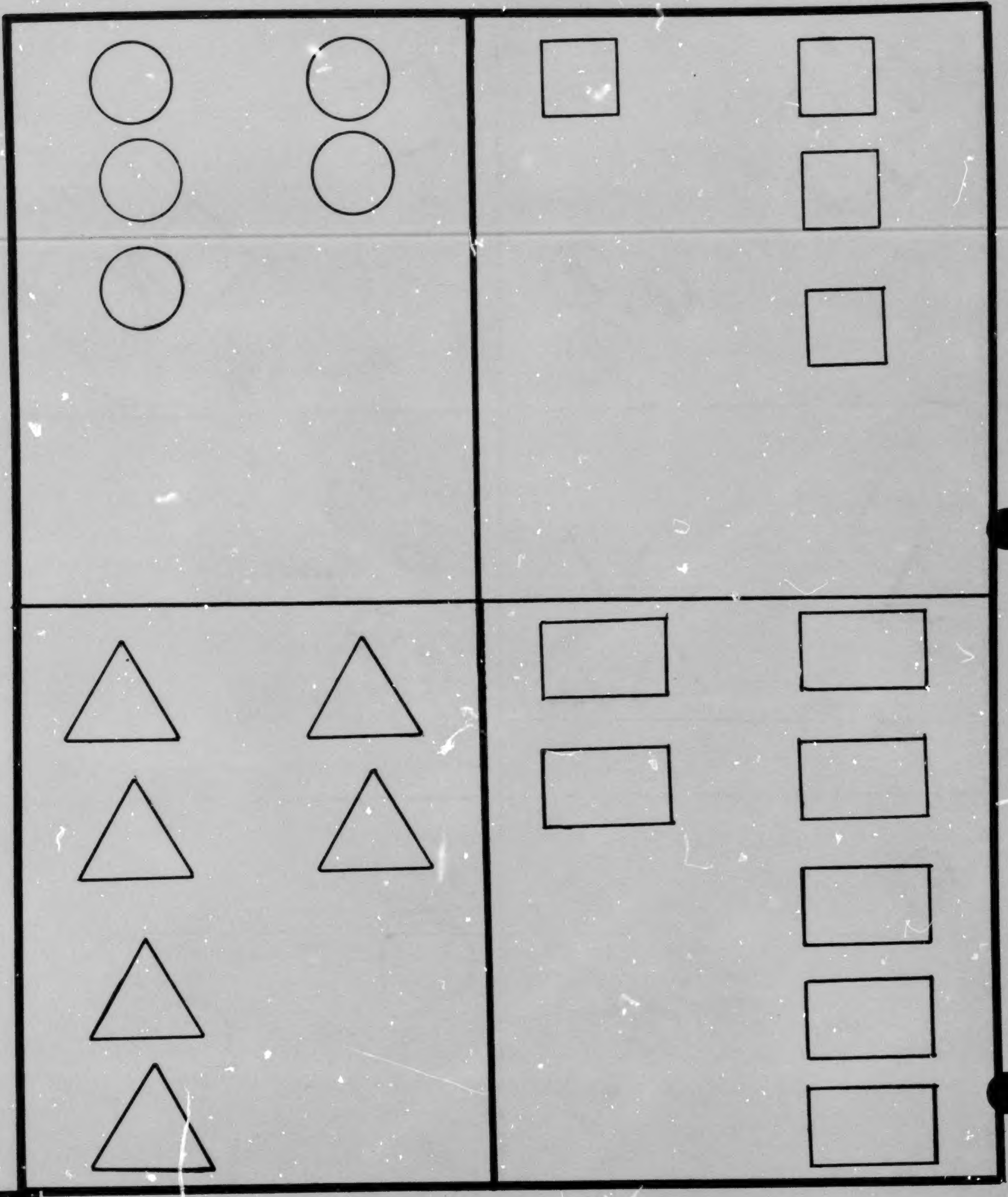




P.O. 1.01.06.04

NAME: ______________________ CLASS: __________ DATE: ________

Color the group that has more.
Circle the group that has fewer.



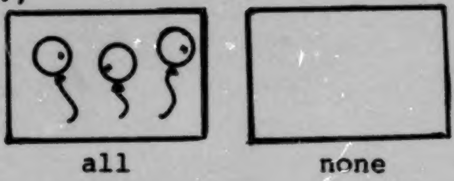
1.01.07 QUANTITIES

(2-3 lessons)

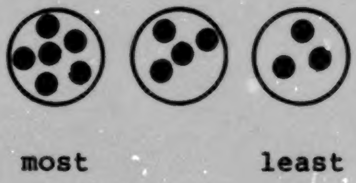
PERFORMANCE OBJECTIVES

The student will be able to...

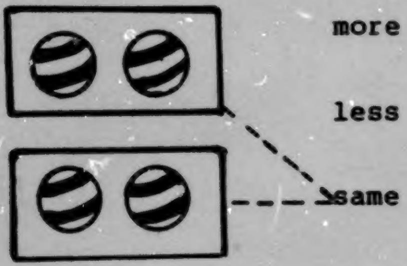
*1.01.07.01A distinguish between all and none; e.g.,



*1.01.07.02A distinguish between most and least; e.g.,

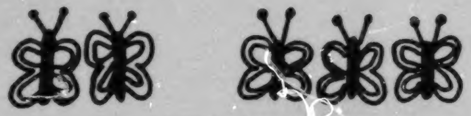


*1.01.07.03A decide whether the groups (sets, lots, bunches, heaps, piles) have the same number of objects (as many as); e.g.,


more
less
same

*1.01.07.04A distinguish between more than and less than;

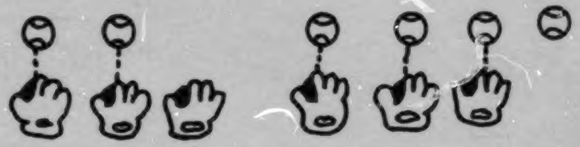
e.g.,



less than more than

*1.01.07.05A distinguish between not enough and extra.

e.g.,



not enough extra

1.01.07

VOCABULARY

TERMS

all
none
most
least
same
more than
less than
not enough
extra
share

GETTING STARTED

Seat students in groups of four to six. Distribute a box of buttons, paper clips, and other objects to each group. Say, "I would like each of you, in turn, to reach into the box and take out a handful of buttons. Place the buttons in front of you." When the task has been completed, discuss the results. Say, "Is there a student who didn't get any buttons? Is the box now empty?" Ask the students to compare their groups of objects.

Sing the song, "Chickadee," and dramatize.

"Five little chickadees sitting by the door,
One flew away and then there were four."
Chorus: "Chickadee, chickadee, happy and gay,
Chickadee, chickadee, fly away."
"Four little chickadees sitting in a tree,
One flew away and then there were three."
Repeat chorus.
"Three little chickadees looking down at you,
One flew away and then there were two."
Repeat chorus.
"Two little chickadees having lots of fun,
One flew away and then there was one."
Repeat chorus.
"One little chickadee sitting all alone,
It flew away and then there were none."
Repeat chorus.

1.01.07

1.01.07.01 distinguish between all and none

Prepare and distribute sheets of drawing paper and pegs or interlocking cubes. Allow each student to take a handful from the container. Say, "Fold you paper in half like this. e.g., Place all of your pegs on one side of the paper. Point to the side of the paper that has all of the pegs. Point to the other side. How many pegs does it have? (None.) Everyone point to the side that has none."

Repeat this procedure using different items.

STRATEGY 2: Prepare and distribute groups of classroom articles to the students, e.g., pencils, paper clips, crayons and three containers. Say, "I would like all of the pencils put into this container." Continue this procedure with the other articles. Say, "Where have we placed all of the pencils? How many pencils are now on your desk? (None.) Now all of the pencils are in this container. None of the pencils are on the desks."

Continue this procedure with the other articles and summarize.

1.01.07.02 distinguish between most and least

STRATEGY 1: Prepare and display two boxes and seven crayons. Place five crayons into one box and two crayons into the other. Say, "What have I placed in the boxes? Which box has the most crayons? Which box has the least crayons? How can we tell?"

Continue this procedure by comparing quantities in various groups of objects.

1.01.07

STRATEGY 2: Prepare and display several groups of objects and discuss the contents of each group, e.g., a group of books, pencils, papers, pairs of scissors. Vary the number of objects in each of the groups so that there is an obvious difference in quantity. Say, "Which group has the most objects? Which group has the least number of objects?"

Remove some of the objects and add some objects to change the quantities. Say, "Which group now has the most? Which group now has the least? The group that has the most has more objects than the other groups. The group that has the least has the fewest objects."

Repeat this procedure using other examples.

1.01.07.03 **decide whether the groups have the same number of objects (as many as)**

STRATEGY 1: Prepare and display two groups of objects, e.g., paper plates and paper cups. Say, "How can we tell if we have as many paper cups as paper plates? Do we have a paper plate for each paper cup?" Ask the students to choose different methods which may be used to decide whether or not the groups have the same number of objects. Continue this procedure with other articles.

STRATEGY 2: Prepare and distribute groups of objects to teams of two students. Differ the amounts in the groups, e.g., five groups with three objects; five groups with four objects, and five groups with five objects.

Display a group of five objects. Say, "This is my group of objects. Who has a group with as many objects as I have?" Ask those students to compare

STRATEGY 2: cont'd

their amounts. Say, "If each of these boys and girls have as many objects as I have, then they each have the same number of objects." Ask the students to compare their groups with each other.

Display a different group of four objects and continue this procedure until all the students have had a chance to compare their groups.

1.01.07.04 **distinguish between more than and less than**

STRATEGY 1: Prepare and display two groups of objects. Say, "Do these groups have the same number of objects? Who can tell us which group has more than the other? Who can tell us which group has less than the other?" Give four students some objects to display. Ask, "Who is holding more? Who is holding less?" Ask the students to verbalize the number of objects each is holding, e.g., "I have less than Ben. I have more than Juan." Ask other students to tell about groups of objects by comparing them one to the other.

STRATEGY 2; Prepare and distribute counting chips to each student. Say, "I will place a group of discs on the chalkboard. Display a group which has more chips than my group." Display three discs. Accept any response of more than three chips. Say, "Now please display a group which has less chips than my group." Accept any response of less than three chips.

Continue this procedure.

1.01.07.05 distinguish between not enough and extra

STRATEGY 1: Prepare and display pencils, paper and crayons. Say, "I would like to give out these materials, but I don't know how many of each I have. Will you help me?" Begin by distributing the pencils to each student. Ask, "Did everyone receive a pencil? Did I have enough pencils for everyone? How do you know?" Display the pencils left. Say, "Everyone has received a pencil. I have these left. They are extras."

Distribute the paper. Do not give a sheet to every student. Ask, "Did everyone receive a piece of paper? If you did not, please stand up. What does this mean? Do I have enough paper?" Say, "I did not have enough paper for everyone because some boys and girls did not get any." Immediately provide more paper for those students who did not receive any.

Continue this procedure with crayons and ask the students to verbalize their understanding of the concept.

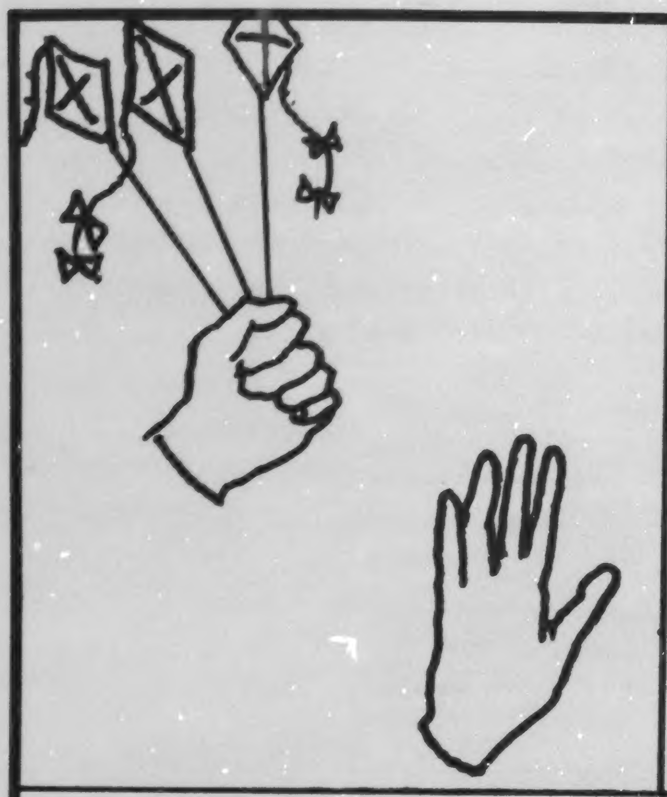
STRATEGY 2: Prepare and distribute pegboards and pegs. Say, "We are going to fill the top row of our pegboards. Put the pegs across the top row of your board. Do you have enough pegs for each hole in the row? Is every hole filled with a peg? Then you have enough. Are there any pegs left over after you have filled all the holes in the row? Those pegs are extra pegs. Can you give the extra pegs to someone who did not have enough?"

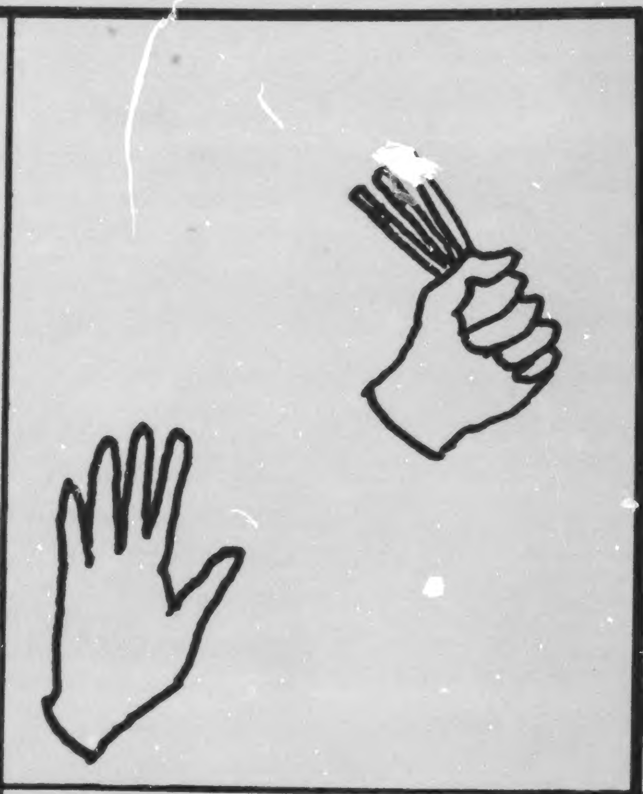
Repeat this procedure using other rows in the pegboard.

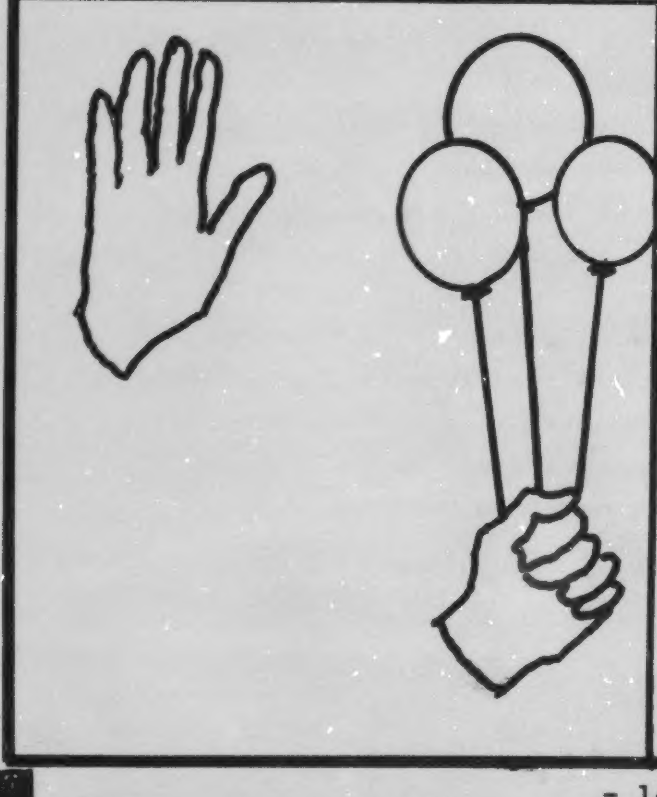
P.O. 1.01.07.01

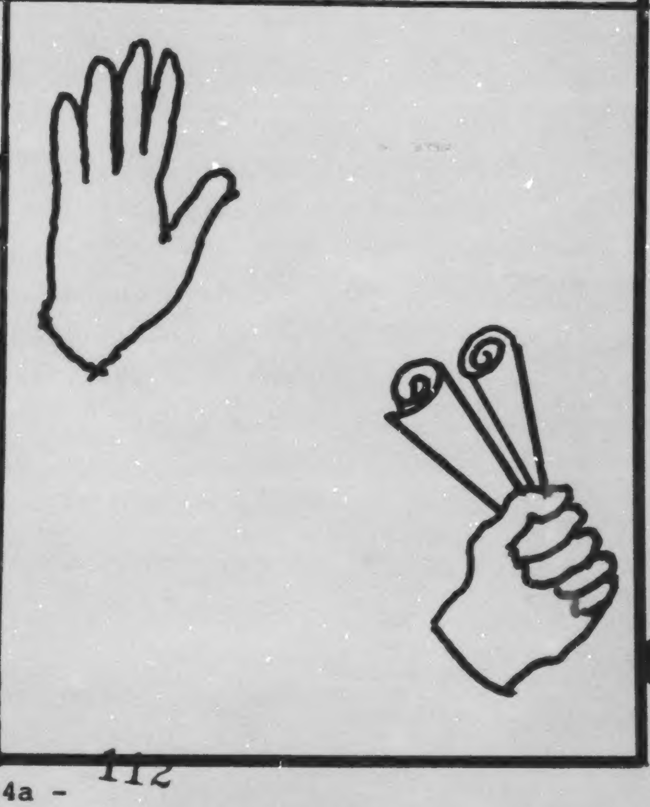
NAME:____CLASS:__________DATE:________

Circle the hand which is holding all the objects.





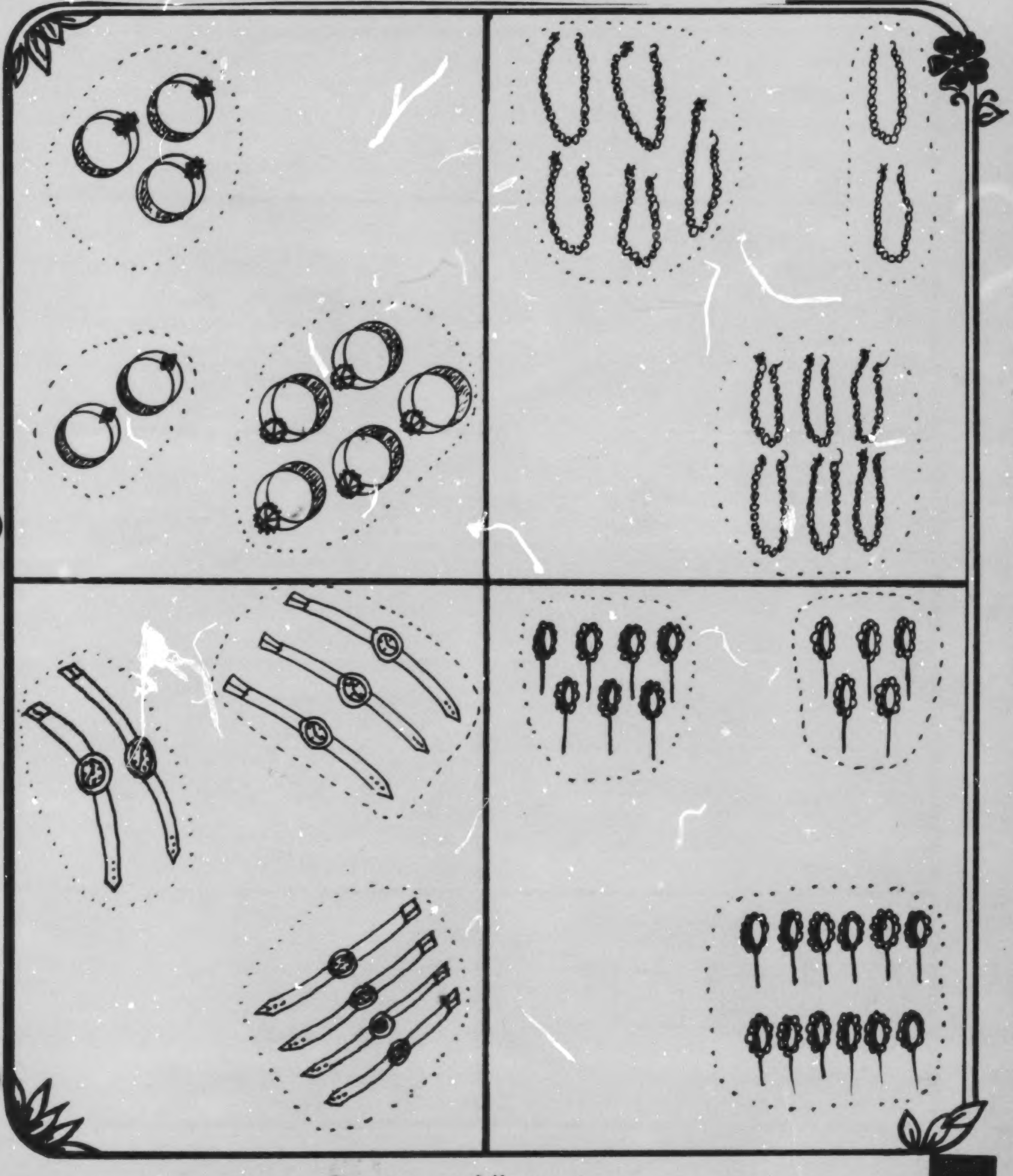




P.O. 1.01.07.02

NAME: ____________________ CLASS: ____ DATE: ________

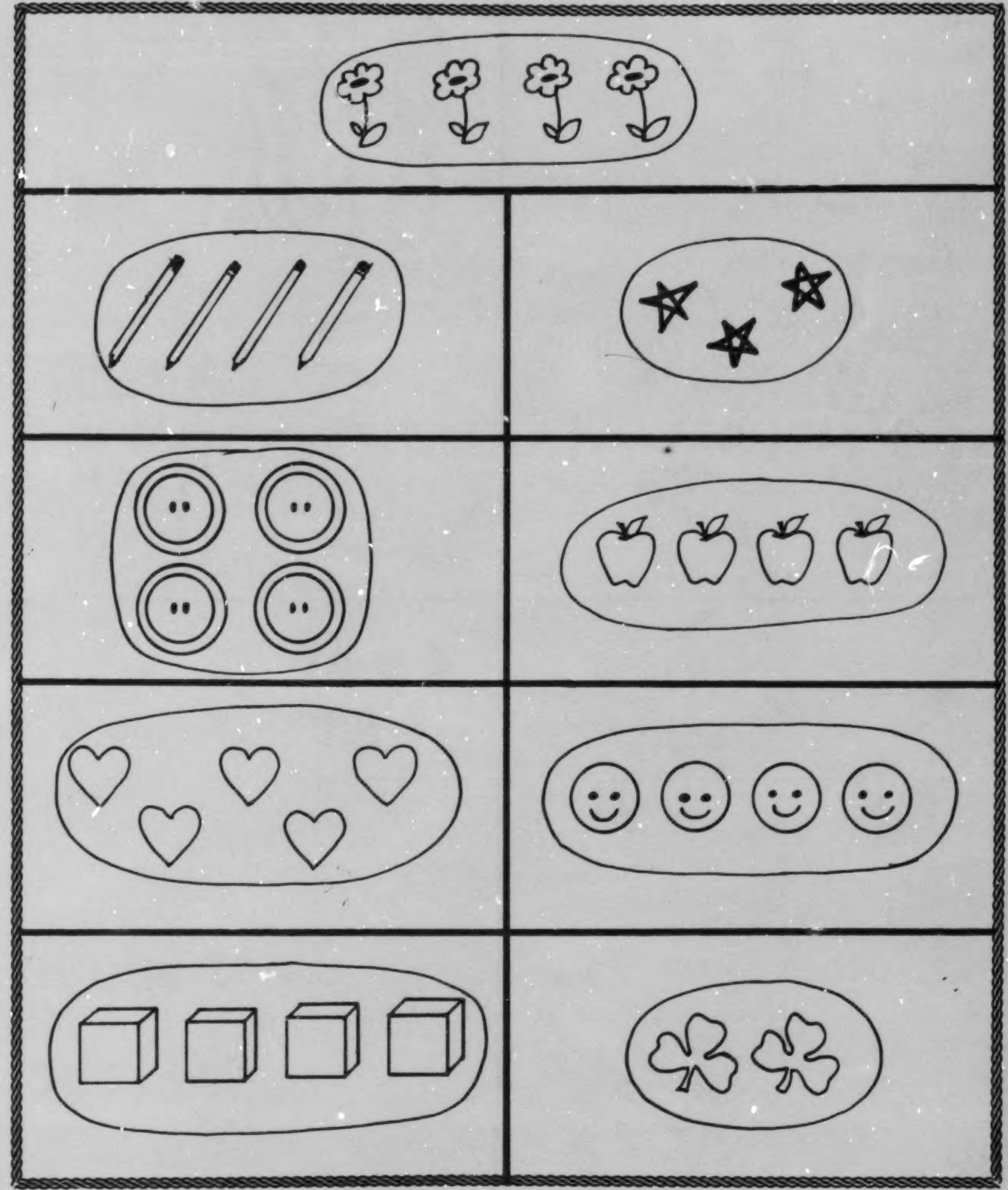
Use your red crayon to color the group with the most.
Use your blue crayon to color the group with the least.



P.O. 1.01.07.03

NAME:______________________________ CLASS:__________ DATE:________

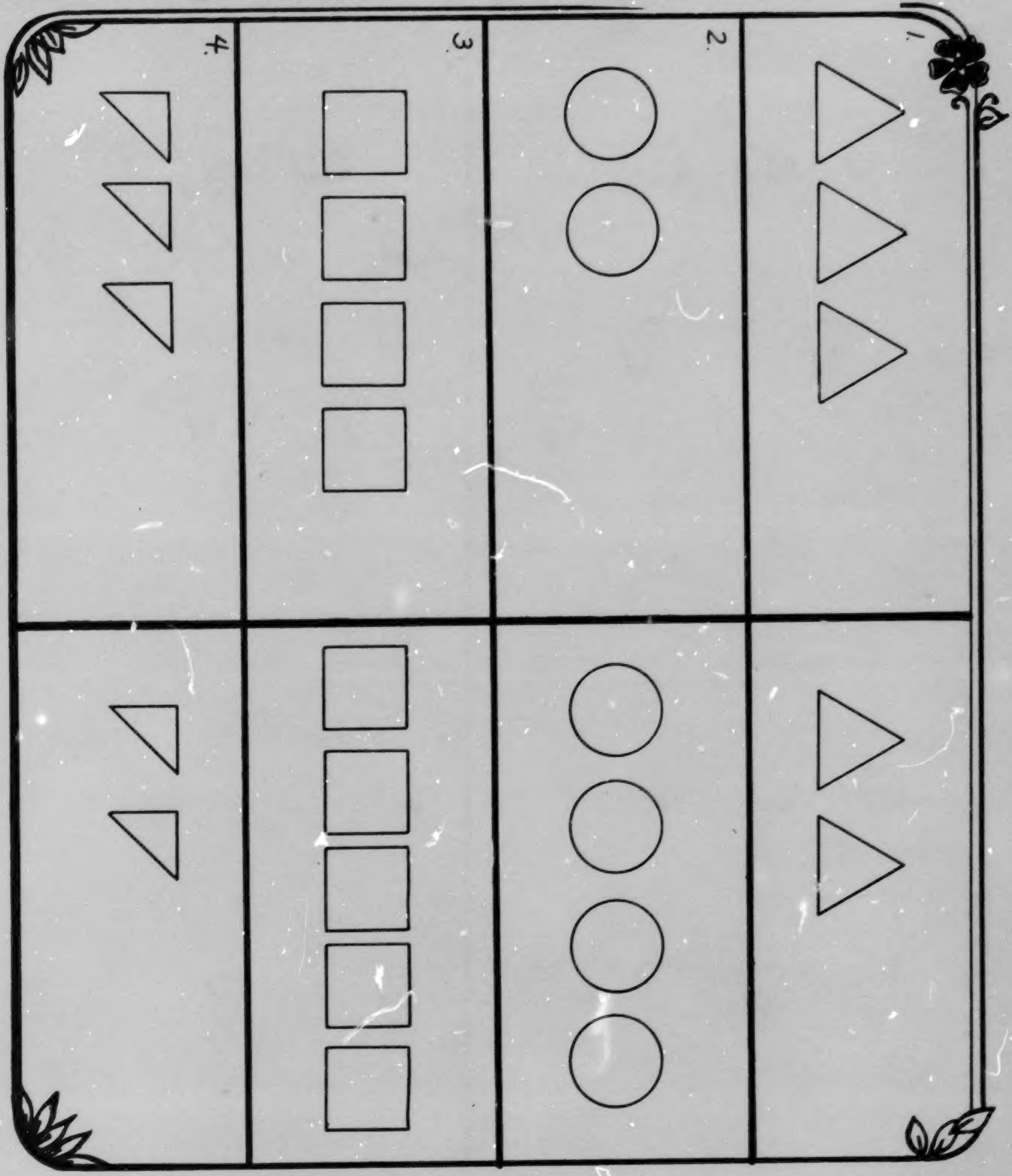
Color the groups which have the same number of objects as the group at the top.



P.O. 1.01.07.04

NAME: ______________________ CLASS: DATE: _____

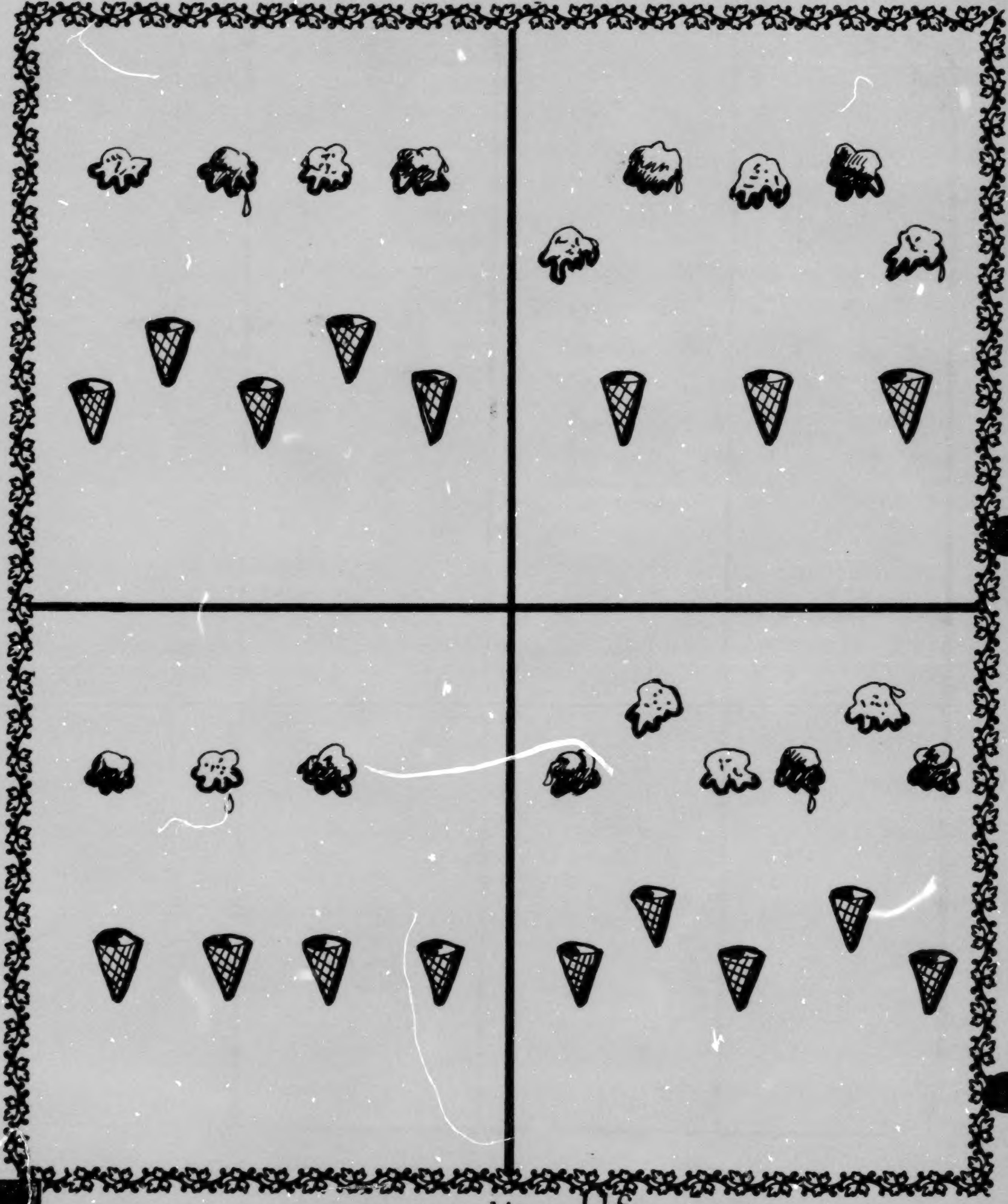
Use your red crayon to color the group with more.
Use your blue crayon to color the group with less.



P.O. 1.01.07.05

NAME: ______________________ CLASS: __________ DATE: ________

Match the ice cream to the cones.
Color the extra ones.



Unit 10

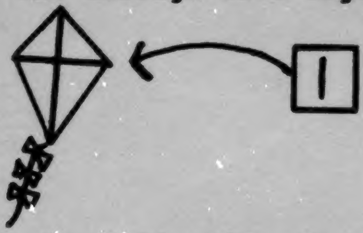
1.01.08 NUMERALS ONE (1) THROUGH FIVE (5)

(3 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

1.01.08.01A associate the numerals 1 through 5 with a group (set, lot, bunch, heap, pile) having one through five objects;
e.g.,



1.01.08.02A recognize and identify the symbols "1" through "5" as numerals for the numbers one through five;
e.g.,

1, 2, 3, 4, 5

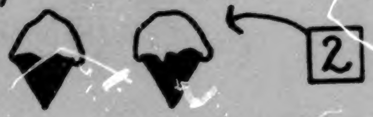
*1.01.08.03A recite the numerals 1 through 5 in correct counting order;
e.g.,

1, 2, 3, 4, 5

*1.01.08.04A write the numerals 1 through 5;
e.g., 1 ,1 2 ,2 ... 5,5

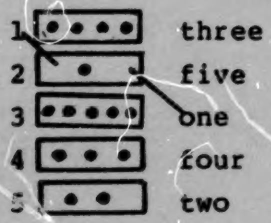
1.01.08.05A identify the number of objects in a given group of 1 through 5;

e.g.,



*1.01.08.06A associate the number words "one" through "five" with the numerals 1 through 5 and with groups having one through five objects;

e.g.,



1.01.08.07B locate where you can find the numerals 1 through 5 in the home, school and/or neighborhood.

e.g.,

addresses

street signs

1.01.08

VOCABULARY

TERMS	SYMBOLS
one	1
two	2
three	3
four	4
five	5
counting	

GETTING STARTED

Prepare and distribute a set of 1 through 5 wiggly lines (to represent strings for balloons). At the board, draw 5 wiggly lines. Ask a student to draw 1 balloon on each string. Say, "The number of strings and balloons is the same because they match." Circle the matched sets. Ask students to complete their cards by drawing a sufficient number of balloons to match the strings. Say, "How do we know the number of strings and balloons are the same?"

Prepare and distribute construction paper with a thick magic marker line down the center and 10 interlocking blocks to each child. Ask the students to hold their papers horizontally. Display a magnetic board divided in half by a chalkline and magnetic yellow discs. Place 1 disc on the first half of the magnetic board. Ask the students to do the same on their construction paper. Say, "Place more blocks on the other side of the paper." Ask a student to show his/her answer on the magnetic board. Say, "How do we know it is more?" Continue this procedure for more and fewer.

1.01.08

1.01.08.01 **associate the numerals 1 through 5 with a group (set, lot, bunch, heap, pile) having one through five objects**

STRATEGY 1: Prepare and distribute 5 counting chips and numeral cards 1 through 5 to each student. Ask one student to display one notebook. Ask other students to show one object. Hold up a card with a large numeral "1" printed on it and tell children that this is one of the ways we name "one." Ask students to display the correct number of chips to match the card. Put the "1" card on the chalkboard ledge. Continue this procedure for number 2 through 5. Choose a card at random and ask the students to say the number name and display the correct number of chips.

STRATEGY 2: Prepare a flannel board, felt cutouts of sets of objects 1 through 5 and cards numbered 1 through 5. Place one cutout on the flannel board and ask a student to tell "how many." Show the numeral card "1." Say, "This is the number one. It tells us we have one thing. This numeral is used to show the number one. Continue this procedure for 2 through 5.

Place sets of 1 through 5 items on the flannel board and ask the students to name the number of objects and find the matching numeral card.

1.01.08.02 **recognize and identify the symbols "1" through "5" as numerals for the numbers one through five**

STRATEGY 1: Prepare and display flashcards numbered 1 through 5. Ask the students to read them as you put them one by one into a paper bag. Say, "We will do

STRATEGY 1: cont'd

certain things the number of times the card tells us to." Have one student pull a number out of the bag. The remainder of the class may clap their hands, stamp their feet, or perform some other action the number of times indicated by the numeral. Have pupils say, "We (action) (number) times." Repeat the action. Continue this procedure for the remainder of the cards.

STRATEGY 2:

Prepare a set of dot cards 1 through 5 and a set of sandpaper numerals 1 through 5. Place the dot cards in various places around the room. Select students to walk around the room, locate and count the dots on a given card.

Place the sandpaper numerals in a bag. Say, "We are going to play a guessing game. You must choose a dot card. Next, put your hand in the bag and try to find the numeral that matches your dot card. After the student finds the numeral, he/she shows the numeral to the class. Repeat this procedure until every student has had a chance.

1.01.08.03 **recite the numerals 1 through 5 in correct counting order**

STRATEGY 1:

Play, "Hide The Eraser." One student is selected to be "It" and hides the eraser while the remainder of the class puts their heads on their desks with their eyes closed and slowly counts from 1 through 5. Students are selected to search for the eraser. The student who finds the eraser is able to hide it for the next game.

1.01.08

STRATEGY 2: Ask the students to stand in one line and count off, e.g., 1, 2, 3, 4, 5, 1, 2, 3, ... Ask the first five students to form a line in counting order. Each successive group of five should line up behind this group. Say, "I will tell you to do something. You will do as I say according to the number you have been given. If I say, "Jump," all the number ones will jump once and will say 'one,' all the number two's will jump twice and say 'two,' ..." Repeat this procedure giving other directions, e.g., hop, clap.

1.01.08.04 write the numerals 1 through 5

STRATEGY 1: Prepare and distribute small bowls of water and fingerpaint paper to each student. Draw an X on the chalkboard to show where you would begin writing the numeral 1, e.g., Ask the children to practice writing the numeral 1 in the air. Say, "Dip your finger into the water. Write the numeral 1 on your paper in water". Continue this procedure for the numerals two through five.

STRATEGY 2: Display large numerals in the front of the room as models. Students should write the numerals in the air with guided motions. Repeat this procedure a few times. When you feel the students understand the hand motions, ask them to trace and then write the numerals on lined paper.

To continue practicing, distribute a container lid with sand or salt to each student or small group of students. Say, "We will write the numeral 1 in the sand. Repeat this procedure for the numerals 2 through 5.

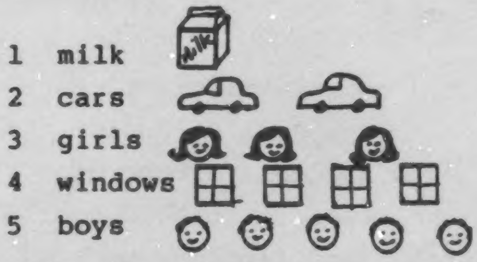
1.01.08

1.01.08.05 **identify the number of objects in a given group (set, lot, bunch, heap, pile) of 1 through 5**

STRATEGY 1: Prepare a set of numeral cards and set of objects. Show one object. Say, "How many objects do you see?" Ask a student to choose the appropriate numeral card. Ask individual students to name or point to an object of which there is only one in the classroom. Repeat this procedure through the numeral 5.

Prepare a visual graph of this lesson. e.g., if you show one container of milk, draw it on the board next to the numeral 1.

e.g.,



STRATEGY 2: Display a group of objects for each numeral from 1 through 5. Place the objects on individual trays. Give each student a set of cards numbered from 1 through 5. Ask a student to count the objects on each tray and place a numeral card on the tray which shows the number of objects on that tray.

Repeat this procedure by placing a numeral card on each tray and asking individual students to place the correct number of objects to correspond with the numeral on that tray.

1.01.08

1.01.08.06 **associate the number words "one" through "five" with the numerals 1 through 5 and with groups having one through five objects**

STRATEGY 1: Prepare and distribute five chips, numeral cards 1 through 5 and word cards "one" through "five." Display a set of each at the chalkboard. Ask the students to display one chip and find the matching numeral card. Display the word "one" and say, "This is the word one. It tells us we have one thing." Continue this procedure for the other numbers. Vary the procedure by displaying the word card and ask the students to match the numeral and display an equivalent group of chips.

STRATEGY 2: Prepare and distribute picture cards, number word cards and numeral cards for the numerals 1 through 5. Show students groups of 1 through 5 objects. Ask the students to hold up the symbol card for the numeral 1 and find one object. Display the word card. Say, "This is the word 'one'."

Continue this procedure.

1.01.08

1.01.08.07 locate where you can find the numerals 1 through 5 in the home, school and/or neighborhood

STRATEGY 1: Before beginning this activity, take the class for a walk around the school to locate the numerals 1 through 5, e.g., license plates, road signs, street numbers, and billboards. When you return to the classroom, write an experience chart explaining the purpose and findings of your walk. Display this chart on the bulletin board.

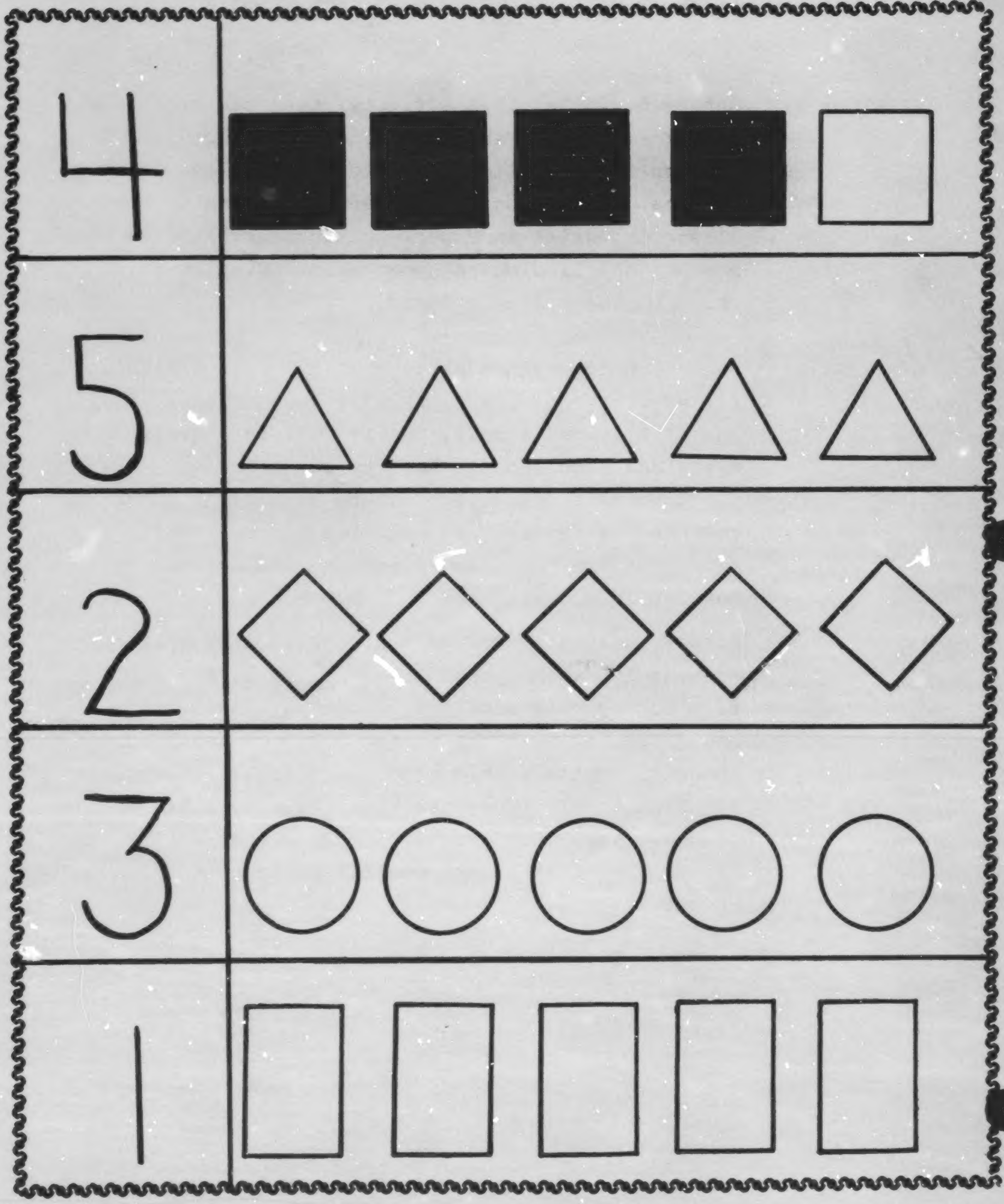
STRATEGY 2: Show a photograph or picture of a large parking lot filled with vehicles. Ask, "If each of these vehicles (cars, trucks, buses) park here every night and each vehicle has its own place to park, how does each driver know where to park?" (Each vehicle has an assigned numbered space.) Say, "Today we are going to be parking lot attendants. Our job is to park cars."

Display a large piece of oaktag with a drawing of a parking lot with spaces labeled 1 through 5 and five oaktag cars similarly labelled. Ask, "Who would like to park car number 1 in its assigned space?" Continue this procedure for cars 2 through 5. Repeat this procedure by parking cars at random. Say, "Car number 3 entered the parking lot first. Which attendant would like to park car number 3?"

P.O. 1.01.08.01

NAME:____________________ CLASS:________ DATE:_______

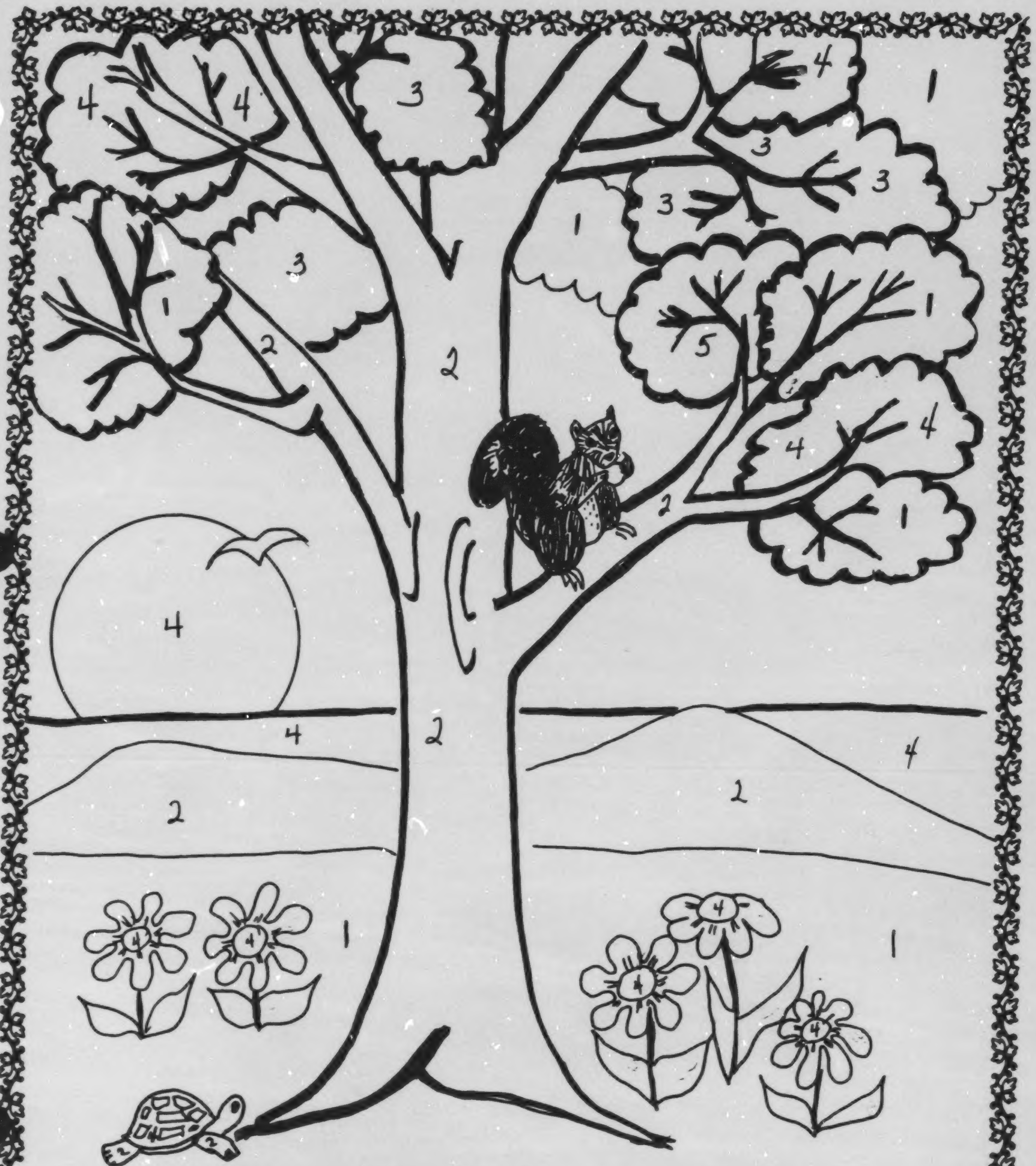
Color the number of shapes each numeral names.



P.O. 1.01.08.02

NAME: ________________________ CLASS: __________ DATE: ________

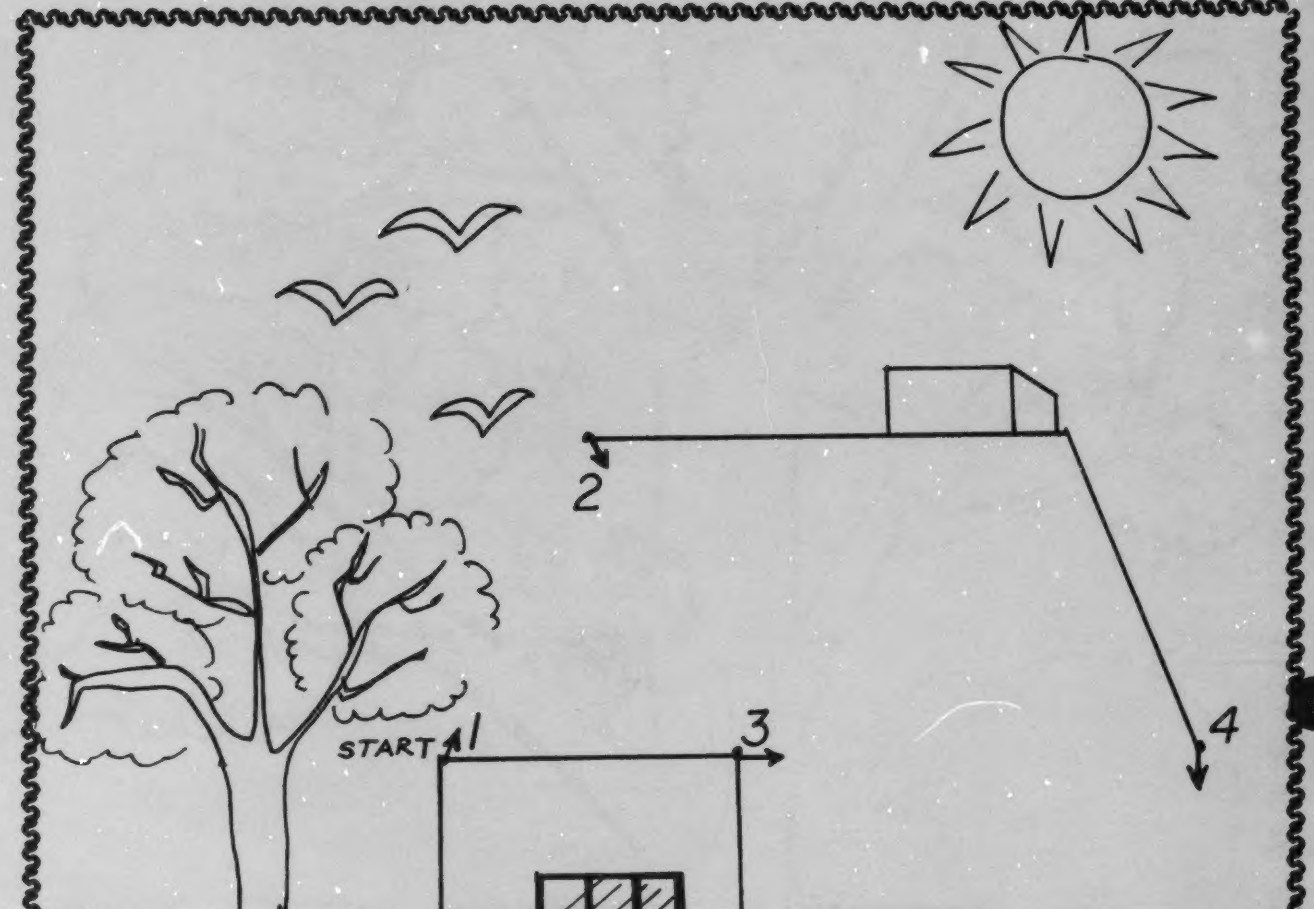
Color 1 green; 2 brown; 3 orange; 4 yellow and 5 red.


4
4
3
4
1
3
3
3
1
3
1
2
2
5
1
4
4
2
1
4
4
2
4
2
2
1
4
4
1
4
4
4
2
2

P.O. 1.01.08.03

NAME: ______________________ CLASS: ________ DATE: ______

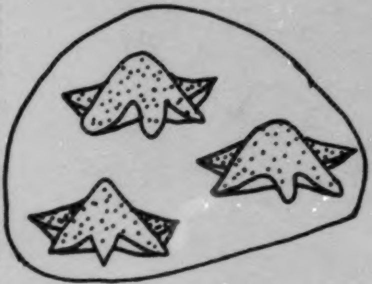
Connect the dots in correct counting order
(1 through 5).


START
1
2
3
4
5
0

P.O. 1.01.08.04

NAME: ______________________________ CLASS: ________ DATE: ________

Write the number of objects you see in each group.



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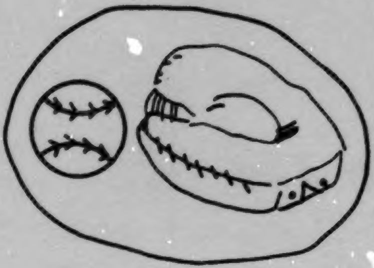

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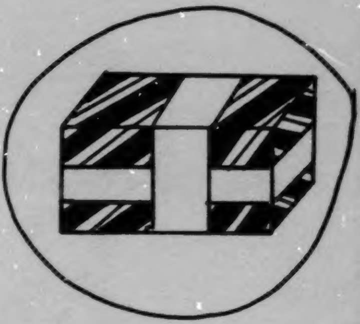

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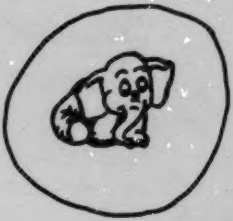

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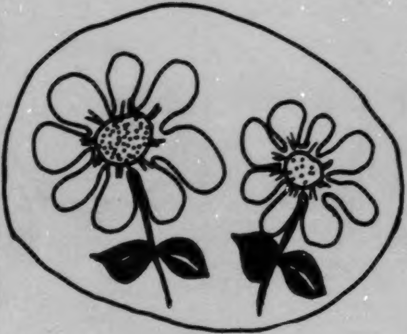

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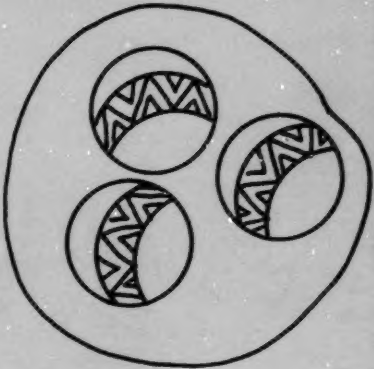

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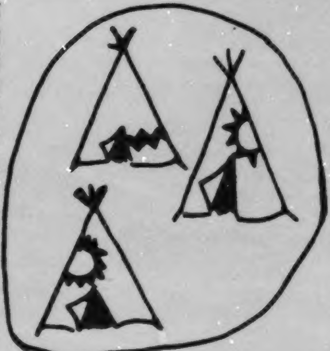

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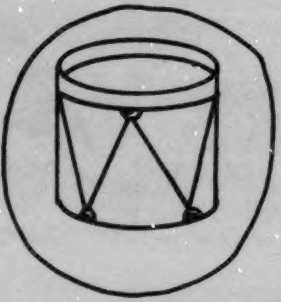

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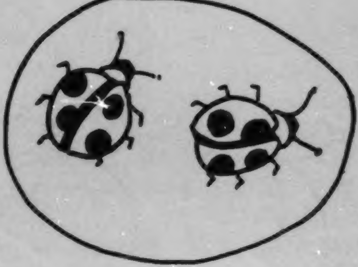

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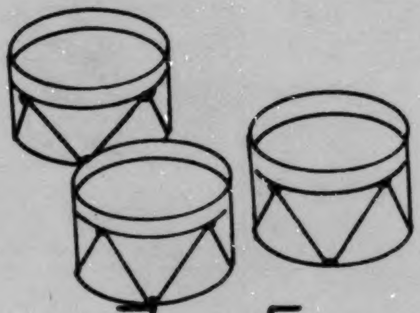
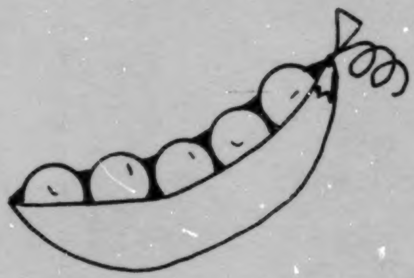
P.O. 1.01.02.05

NAME: ______________________ CLASS: __________ DATE: ________

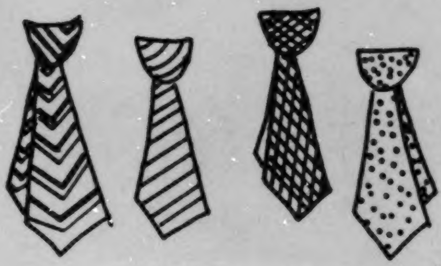
Circle the number that tells how many objects are shown in each box.



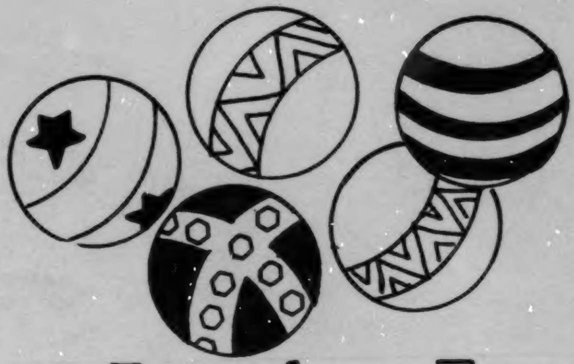
4 3 5



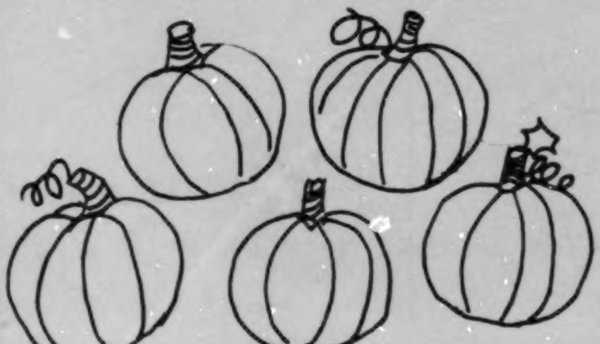
2 5 4



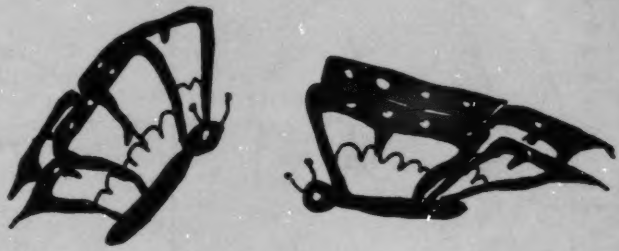
2 4 5



5 4 3



3 4 5

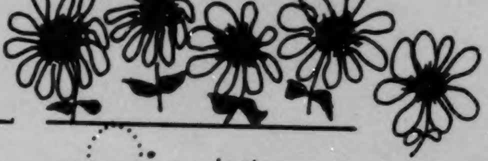


3 5 2

P.O. 1.01.08.06

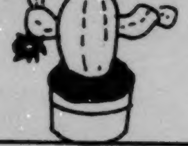
NAME: ____________________ CLASS: __________ DATE: __________

Write the numeral and trace the number word for each group of objects.



___ ___

5 five



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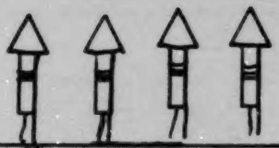
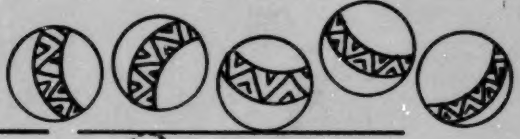
___ one



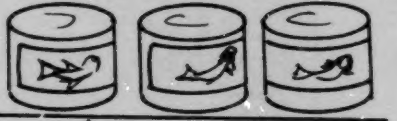
___ ___

___ four



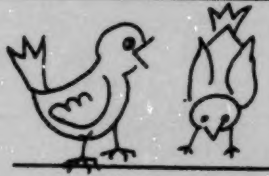
___ ___

___ five



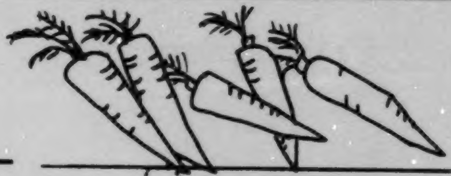
___ ___

___ three



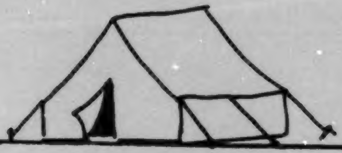
___ ___

___ two



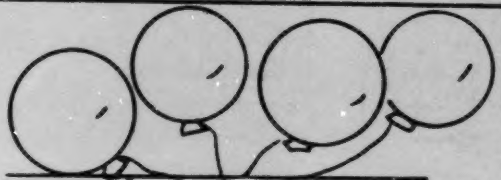
___ ___

___ five



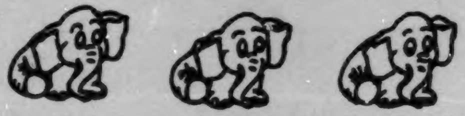
___ ___

___ one



___ ___

___ four



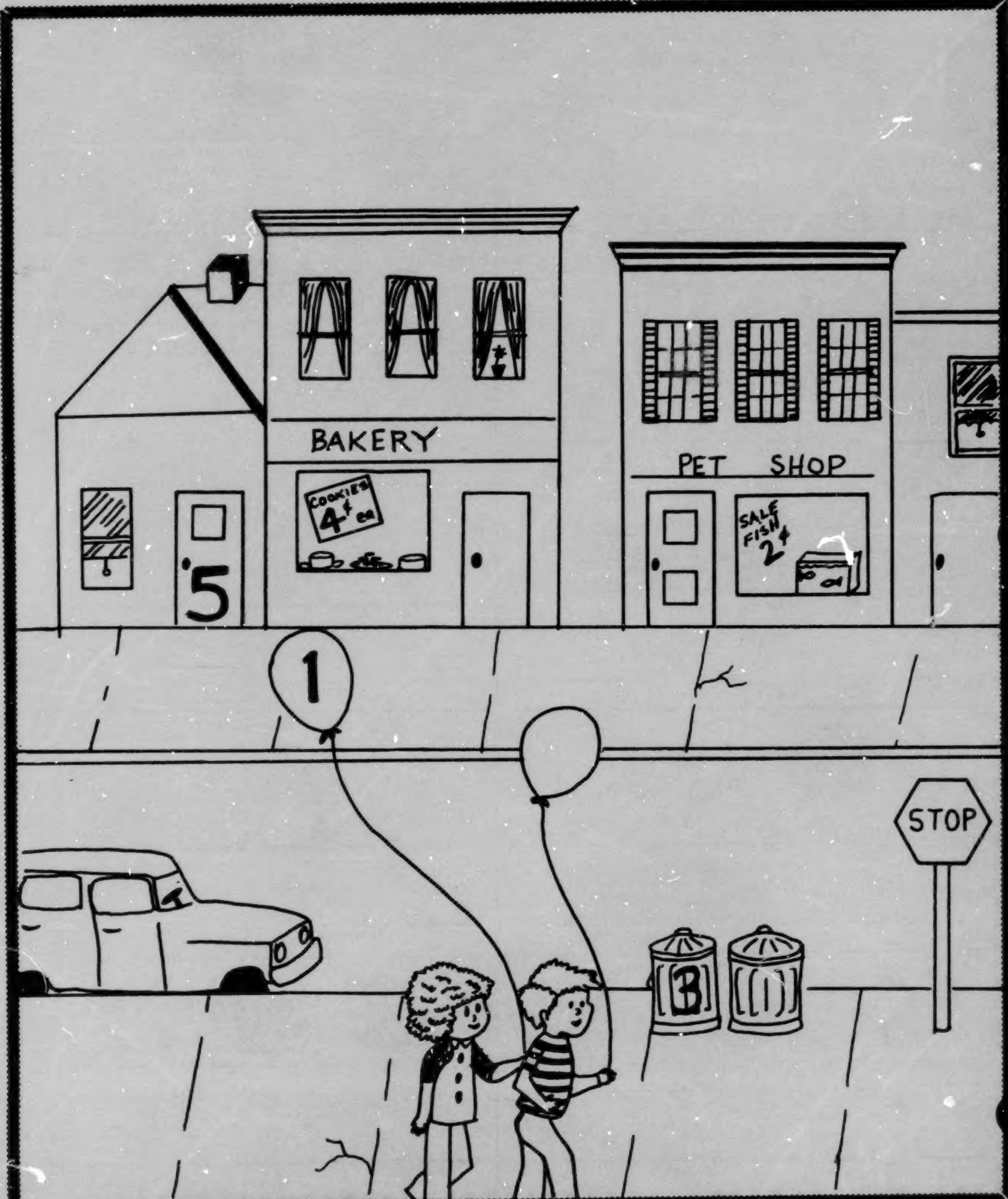
___ ___

___ three

1.01.08.07
P.O. ____________

NAME:____**CLASS:**__________**DATE:**________

Color the spaces where you see the numerals 1, 2, 3, 4 and 5.


BAKERY
COOKIES 4¢ ea
5
PET SHOP
SALE FISH 2¢
1
STOP
3
1

1.09.01 PATTERNS

(1-2 lessons)

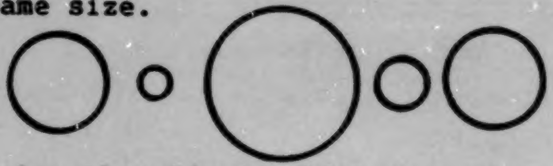
PERFORMANCE OBJECTIVES

The student will be able to...

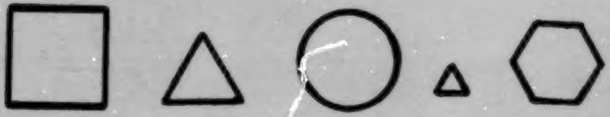
1.09.01.01A use attributes to classify objects by size, shape, or color;

e.g.,

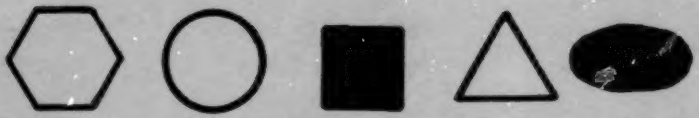
Color the objects that are the same size.



Color the objects which have the same shape.



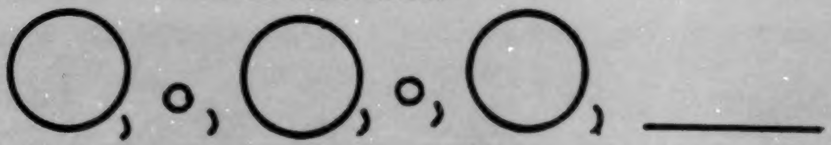
Cut out objects which are black.



1.09.01.02A identify different patterns with one variable attribute by size, shape or color.

e.g.,

What comes next?



1.09.01

VOCABULARY

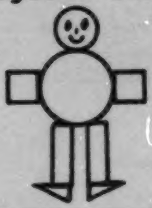
TERMS

circle
triangle
square
rectangle

GETTING STARTED

Prepare and distribute two paper circles, squares, triangles and rectangles (use shapes of different sizes), construction paper and paste to each student. Say, "Today we are going to make a shape person. Let's review the shapes." Hold up the shapes one at a time and ask students to identify them. Say, "Paste the large circle in the center of the paper for the body. Paste the two rectangles under the circle as legs." Continue until the shape person is completed.

e.g.,



Prepare three of each of the following shapes backed with tape: triangles, squares, circles and rectangles. Vary the size of each shape, e.g., Place the large circle on the chalkboard. Ask individual students to find a larger circle and then the largest circle.

Continue this procedure using the other shapes.

1.09.01

1.09.01.01 **use attributes to classify objects by size, shape or color**

STRATEGY 1: Prepare and distribute five or six shapes of various sizes and colors to students. Say, "Today we are going to work with shapes of different size and color. Find all of the shapes that are red. Find all of the shapes that are the same size. Find all of the shapes that are round."

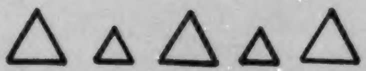
Continue this procedure classifying according to attributes of size, shape and color.

STRATEGY 2: Prepare and distribute crayons and a rexographed sheet with pictures in the shapes of circles, squares, triangles and rectangles. Hold up the shapes and ask the students to identify each shape. Say, "Which of the pictures on your paper are round like a circle? Let's color all of those pictures green."

Repeat this procedure for the remaining pictures.

1.09.01.02 **identify different patterns with one variable attribute by size, shape or color**

STRATEGY 1: Draw the following pattern on the chalkboard, e.g.,



Say, "We have a large triangle, then a small triangle, a large one, a small one and then another large triangle. Who can tell us what comes next?" Ask a student to draw the correct size triangle.

Repeat this procedure alternating shapes or colors. Use colored chalk to alternate colors.

STRATEGY 2: Ask three boys and two girls to come to the front of the room. Position them in a row alternating sexes.

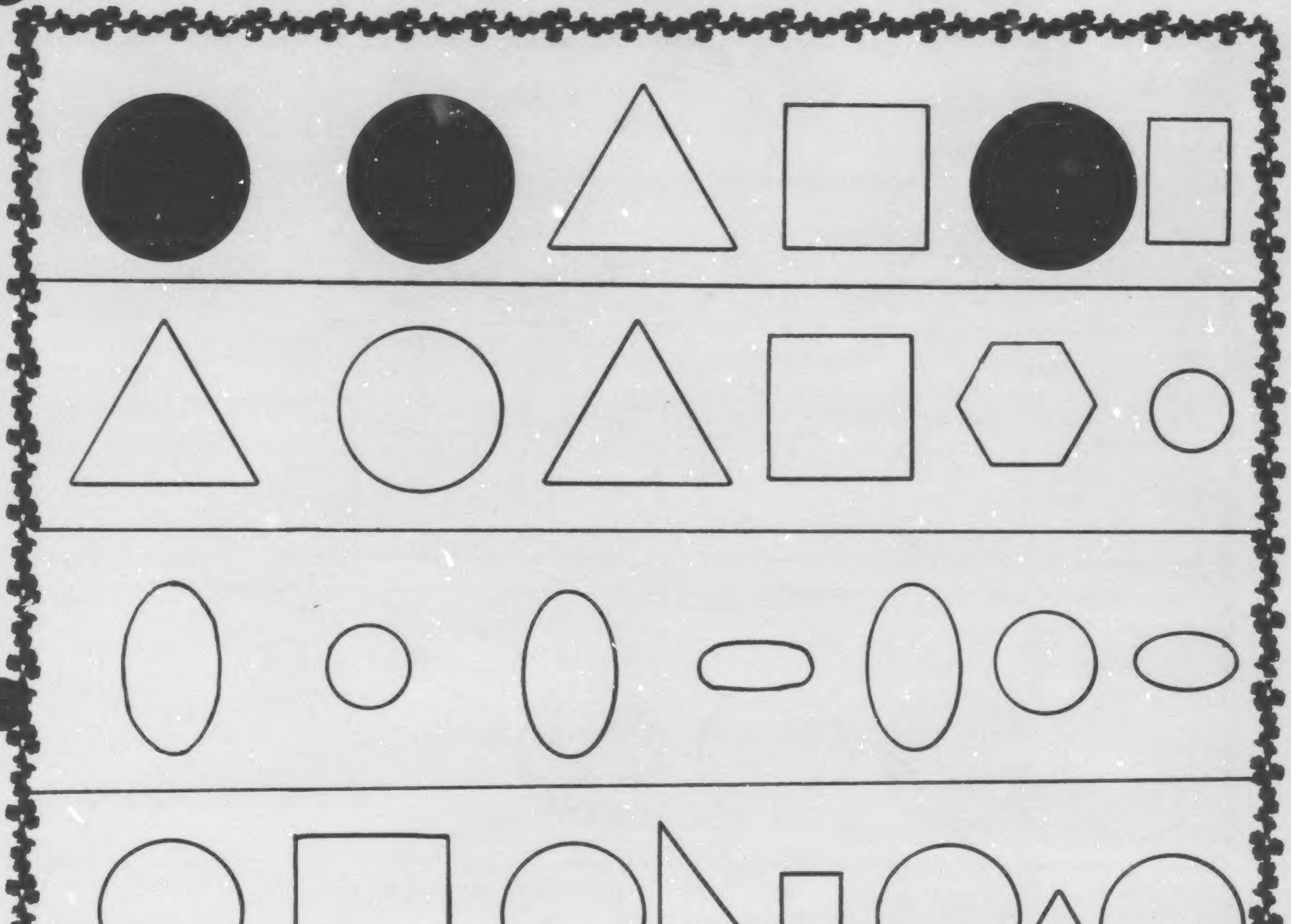
Say, "Look carefully to see who would go next. If you think you would fit the pattern, please stand."

Repeat this procedure using color of clothing as criteria.

P.O. 1.09.01.01

NAME: ______________________ **CLASS:** ________ **DATE:** ________

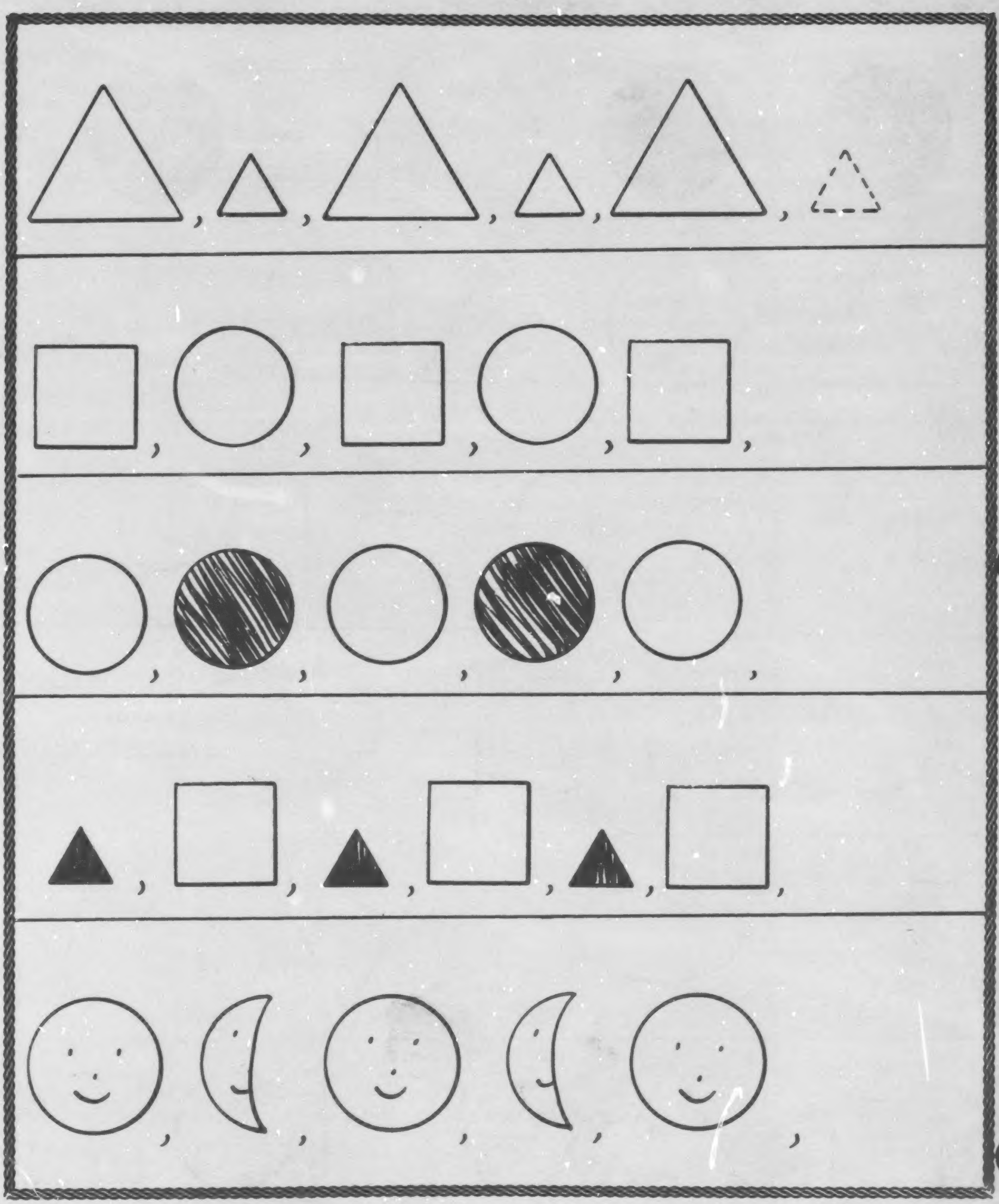
Color the objects which have the same size and shape.



P.O. 1.09.01.02

NAME: ______________________ CLASS: __________ DATE: ________

Draw the shape that comes next.



1.09.02 PROPERTIES OF FIGURES AND SHAPES

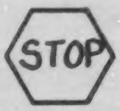
(2 lessons)

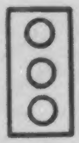
PERFORMANCE OBJECTIVES

The student will be able to...

1.09.02.01A observe the likenesses and differences of shapes in the environment;

e.g.,





1.09.02.02A discover some properties of 2-dimensional shapes (circles, squares, rectangles, and triangles);

e,g.,

Corners, edges...

1.09.02.03A discover some properties of 3-dimensional shapes (cubes, rectangular prisms, spheres, cylinders and pyramids).

e.g.,

Rolls, faces, corners and edges.

1.09.02

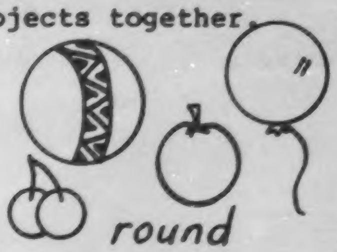
VOCABULARY

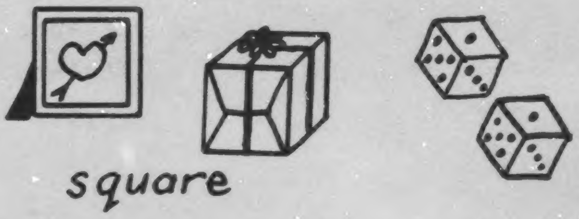
TERMS

same
different
2-dimensional
3-dimensional
cube
rectangular prism
sphere
cylinder
pyramid
corner
edge

GETTING STARTED

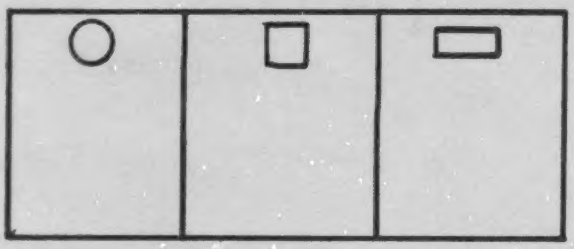
Prepare and display a variety of 2-dimensional and 3-dimensional objects on a table, e.g., magazine photos, toy cars, whistles, keys. Ask the students to organize the objects into similar groups and give each group a name. Ask the students why they grouped certain objects together.





Draw 3 columns on the chalkboard. Draw a shape at the top of each column.

e.g.,



Say, "Who knows what shapes these are?" (Point to each column). "Look around the room and see if you can find any objects that have the same shape. When you have found one, raise your hand and tell us the name of the object."

Write the name of the object in each column. Then have each student draw one of the objects on paper and compile a book for each shape.

1.09.02

1.09.02.01 **observe the likenesses and differences of shapes in the environment**

STRATEGY 1: Prepare and display various types of shapes from the environment.
e.g.,

> Tin can, ball, box of cereal, orange, sponge, party hat, blocks, paper cups, piece of chalk, chalkboard eraser, shoe box, record, coin and/or dollar bill.

Hold up one object e.g., a rectangular sponge. Ask a student to select an object that has the same shape. Say, "How are these shapes the same?" (They have flat sides, edges, and corners.)

Ask another student to select an object that has a different shape from the sponge, such as a conical party hat. Say, "How is the party hat different in shape from the sponge?" (The party hat has a point, it is rounded, and it forms a circle on the bottom.)

Continue this procedure using different shapes and objects for comparison.

STRATEGY 2: Prepare and distribute magazines, scissors and envelopes. Ask students to cut pictures of different shapes from a magazine. Say, "Group the pictures which have the same shape into piles. Hold up two pictures from the same pile and tell us why they are the same."

Ask different students to hold up two pictures and explain their similarities. Say, "Place these pictures in the envelopes, keeping pictures with the same shapes together.

1.09.02

1.09.02.02 **discover some properties of 2-dimensional shapes**

STRATEGY 1: Prepare and display a record, an album cover, a napkin, a hoola hoop, a potholder and a large cardboard triangle. Say, "What can we do to a record that we cannot do to the other shapes?" (We can roll it.)

Say, "How are the album cover and the triangle the same? (They have points or corners.) How many corners does each shape have? (The album cover has four corners, the napkin has four corners, the triangle has three corners and the circle is round.) What are the names of the shapes?" (Circle, square, rectangle, and triangle.) Display the objects on a table with a cardboard name card identifying each shape.

STRATEGY 2: Distribute ten pegs to each student. Ask the students to form a shape with the pegs. Say, "Who can describe the shape that you made?" (It has three sides. It has corners.) Elicit as many responses as possible.

Repeat this procedure asking the students to form different shapes and describe them. Prepare a chart about each shape and its description.

1.09.02.03 **discover some properties of 3-dimensional shapes**

STRATEGY 1: Prepare and display a variety of 3-dimensional objects. Say, "Which things roll? (Tin can, ball, piece of chalk.) Which objects have faces? (Block and shoebox.) Which objects in the classroom have edges and corners?" (Desk, closet, bookcase, crayon box, chalk box and chalkboard eraser.)

Make up riddles and ask the students to guess the object.

STRATEGY 1: cont'd

e.g.,

Say, "I'm thinking of an object that is round. It can roll. It has no corners. You can throw it to someone. What is it?"

Say, "I'm thinking of an object that has corners. It has edges too. It has faces and you can build a tower with it. What is it?"

Say, "I'm thinking of an object that is in my refrigerator. It is made of frozen water. It has many sides, but they are all the same size. It has many corners. The sides are straight. What is it?"

Ask the students to make up some riddles of their own.

STRATEGY 2: Prepare and distribute four $8\frac{1}{2}$" x 11" sheets of drawing paper stapled together. Label the booklet, "Shapes."

On top of the second page, ask the students to copy the sentence, "I can roll." Ask the students to draw pictures of objects that roll.

On top of the third page, ask the students to copy the sentence, "I have faces." Ask the students to draw pictures of objects that have faces.

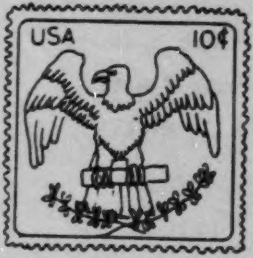
On top of the fourth page, ask the students to copy the sentence, "I have corners and edges." Ask the students to draw pictures of objects that have corners and edges.

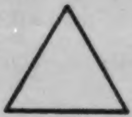
When the booklets are finished, ask different students to show the class their pictures.

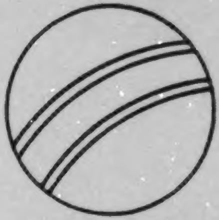
P.O. 1.09.02.01

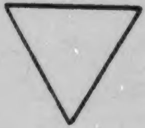
NAME:______________________________ CLASS:__________ DATE:________

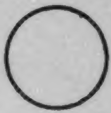
Circle the shape that is like the shape in the first column.

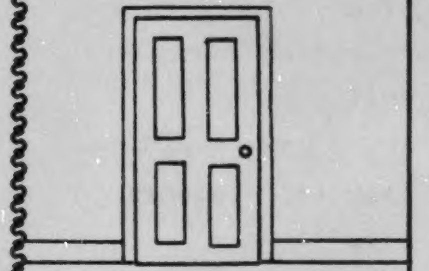


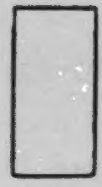


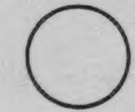


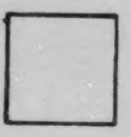


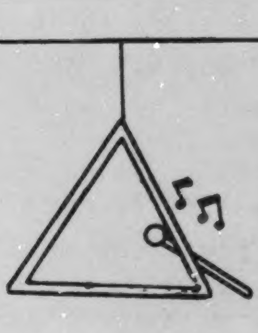


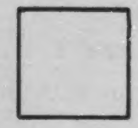


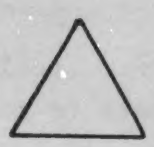


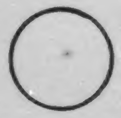








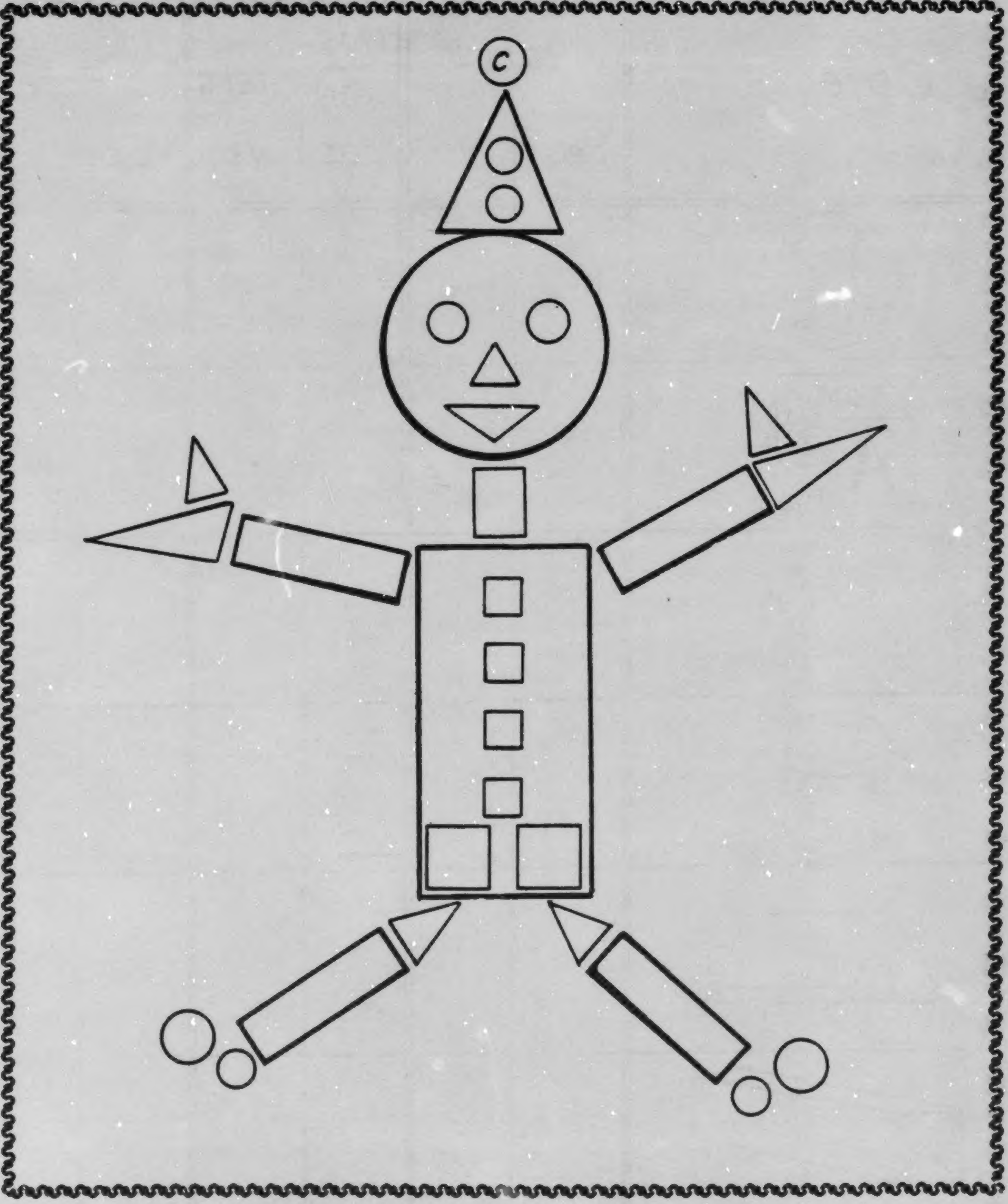




P.O. 1.09.02.02

NAME: ________________________________ CLASS: __________ DATE: ________

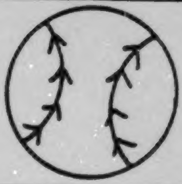
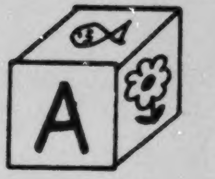
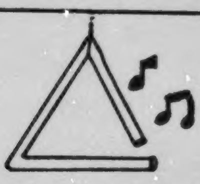
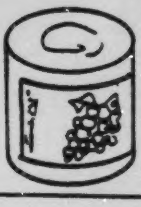
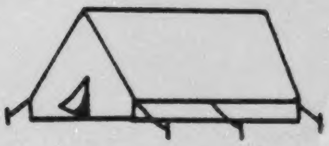
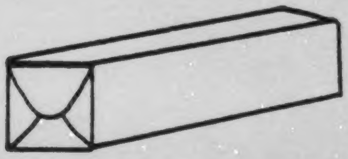
Color each circle red. Color each triangle blue.
Color each square green. Color each rectangle yellow.



P.O. 1.09.02.03

NAME:______________________________ CLASS:__________ DATE:________

Look at the picture. Answer each question with a check mark (✓).

Objects	Rolls		Has Corners		Has Faces	
	Yes	No	Yes	No	Yes	No
						
						
						
						
						
						

1.10.03 MEASUREMENT OF LENGTH - NON-STANDARD

(2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.10.03.01A measure length using non-standard units.

e.g.,

Let's measure the length of the desk using hand cutouts. How many hand cutouts does the desk measure?

1.10.03

VOCABULARY

TERMS

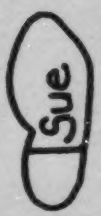
measure
measurement
longer
longest
shorter
shortest
length

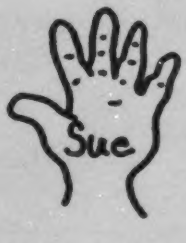
GETTING STARTED

Distribute a set of objects to each student, e.g., paper clip, ice cream stick, piece of paper, crayon. Say, "Compare the length of the paper clip to the crayon. Which is shorter? Which is longer?" The students should compare all the objects. Say, "Which object is the longest in length? Which objects are longer than the paper clip? Which objects are shorter than the paper?"

Students should work in pairs so that each student helps his/her partner to trace his/her hands and feet on paper. The students will write their names on their traced hands and feet and cut them out. Ask a pair of students to display their drawings in front of the classroom. Say, "Whose feet are longer? shorter?"

Display the completed work on a bulletin board.





1.10.03

1.10.03.01 **measure length using non-standard units**

STRATEGY 1: Prepare and distribute chart paper, balls of yarn and a pair of scissors to each group of students. Say, "Once upon a time, there was a salesman who sold material to people to make clothes. When he measured the material, he used each customer's arm from his middle finger to his elbow. (Demonstrate) He called this measurement an 'el.' Why do you think he called it an 'el?' (Because he used his elbow.) But his customers complained that he cheated them. Does anyone know why? Let's find out."

Ask one student from each group to be the salesperson and the others to be customers. Say, "Will all the customers please hold up your arms so the salesperson can measure your 'els'?" As the salesperson does this, ask each neighboring student to cut the yarn at the proper place. After all the students have been measured, place the yarn on group sheets with each student's name above his yarn measure. Display the charts on the board. Say, "Look at Table One's chart.

Are all the pieces of yarn the same length?
Which one is the shortest?
Which one is the longest?
Whose yarn is shorter than John's?
Whose yarn is longer than Bill's?"

Continue this procedure with all the other charts. Say "Who can tell us why some customers thought they were cheated by the salesman in the story?"

STRATEGY 2: Prepare and distribute ten to fifteen interlocking cubes. Say, "We will use our cubes to measure the length of different things. We always start at the

STRATEGY 2: cont'd

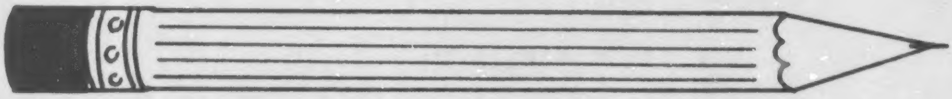
edge of the object when measuring. Guess the number of cubes needed to measure your CIMS book." Ask the students to measure their books. (Demonstrate.) Say, "Why did everyone get the same answer?" (All the books are the same length, all the cubes are the same size.)

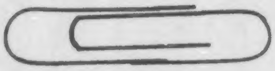
Repeat this procedure using pencils and crayons that are not the same size to measure the book.

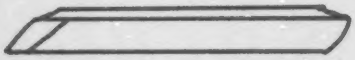
P.O. 1.10.03.01

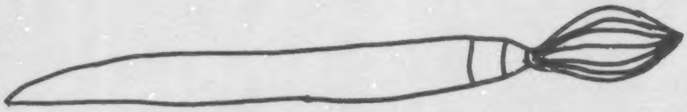
NAME:______________________________ CLASS:__________ DATE:________

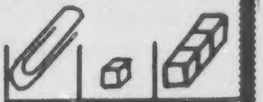
Use the objects shown at the right to measure. . . .











Unit 14

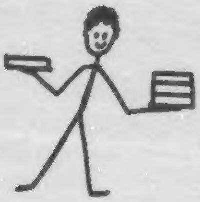
1.10.04 MEASUREMENT OF WEIGHT - NON-STANDARD

(2-3 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.10.04.01A measure weight using non-standard units. e.g.,



VOCABULARY

TERMS	SYMBOL
weight	
heavy	
light	
balance	

GETTING STARTED

Read the story "The Little Fish That Got Away" or "The Carrot Seed" by Ruth Krauss. Discuss the concepts of light and heavy as revealed by the story.

Prepare and display three balls that are different in size and color. Say, "How are these objects alike? (The objects are all balls; they all are round.) How are they different?" (The balls are of different size and color.)

Repeat this activity using other objects for students to distinguish likenesses and differences.

1.10.04

1.10.04.01 **measure weight using non-standard units**

STRATEGY 1: Divide the students into four groups. Place a box of objects and a pan balance on each table. Have each student take two objects from the box and hold both items, one on each hand. Say, "Which object feels heavier? Which object feels lighter? How can we find out?" Ask the students to place the objects on the balance scale and compare them. Say, "Which one is heavier? How do you know? Were you right?" Continue with each student. When all the students have compared their objects, develop a chart for the students to complete. e.g.,

The ______ is heavier than the ______.

The student writes in the name of the object or pastes a picture of the object in the appropriate space.

STRATEGY 2: Prepare and distribute a container of marbles, box of objects and a pan balance to each group of students. Compare the containers of marbles (they should all weigh about the same). Say, "I will put one container of marbles on the pan balance." Ask a student to do the same with another container. Say, "What can we say about these two containers? How do we know they weigh the same?" Continue with each container so that all the students know that all the containers of marbles are the same weight. Say, "We will use our marbles to compare the weight of the objects in the boxes." Ask each student to take an object from the box and guess if they think it weighs more or less than the container of marbles before proceeding to put it on the pan balance. A chart should be developed with the students as the objects are compared to the marbles.

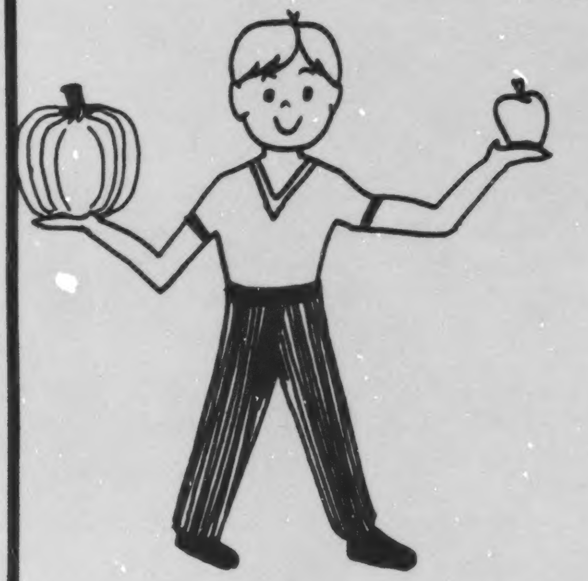
STRATEGY 2: e.g.,
cont'd

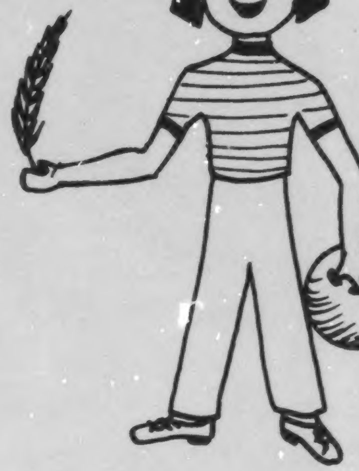
	Container of Marbles		
Object	Lighter	Heavier	Same
Pencil	✓		
Reader		✓	
Box of crayons			✓

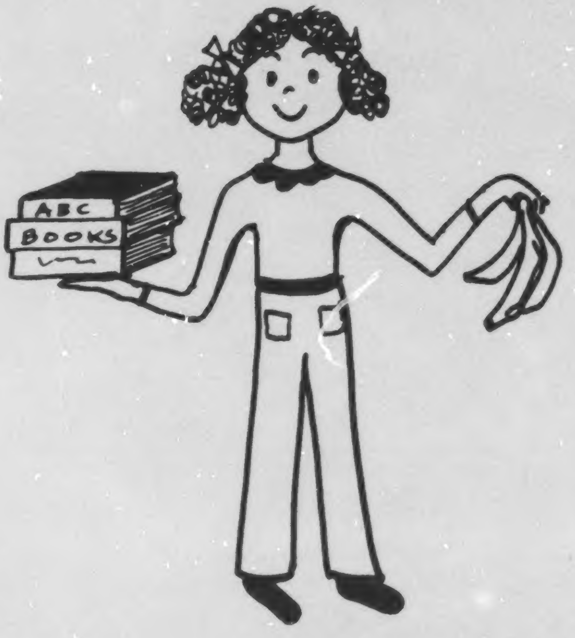
P.O. 1.10.04.01

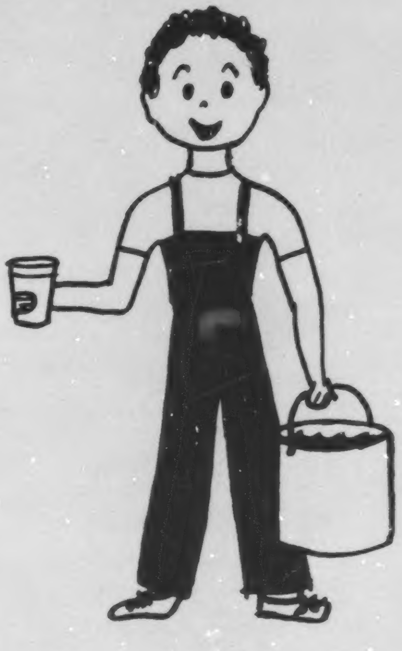
NAME: ______________________ CLASS: __________ DATE: ________

Draw an X on the hand that is holding the heavier object.









Unit 15

1.12.01 PICTOGRAPHS

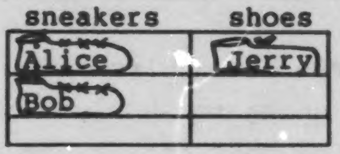
(1-2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.12.01.01A collect, organize and graph data relating to preference using two categories at a time;

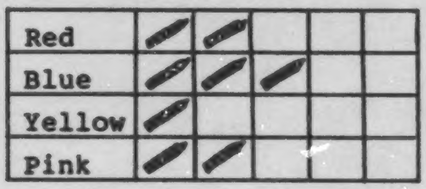
e.g.,



1.12.01.02A read and interpret the information given in a graph using more than two categories;

e.g.,

Favorite Colors

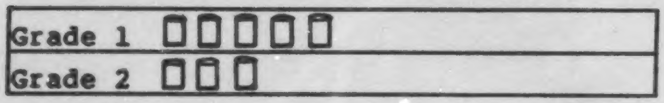


Which color does our class favor?

1.12.02.03A use information on a graph to answer questions involving more or less.

e.g.,

Aluminum Can Collection



Which grade collected more aluminum cans? Grade 1

Which grade collected less aluminum cans? Grade 2

1.12.01

VOCABULARY

TERMS

graph
category
pictograph

GETTING STARTED

Prepare and display a bag of plastic utensils (spoons, forks, and knives). Say, "We are going to sort these objects so we can put them away neatly. The same items belong in the same pile." Ask various students to sort the utensils.

Prepare three categories of pictures, e.g., fruit, toys, vehicles. Say, "I am going to show you four pictures. Three of them belong together; one does not. Look at the pictures and tell us which picture does not belong with the others and why." Display three pictures of fruit and one vehicle. Say, "Which picture does not belong? Why?"

Repeat this procedure using other pictures.

1.12.01

1.12.01.01 **collect, organize and graph data relating to preference using two categories at a time**

STRATEGY 1: Prepare and distribute drawing paper, crayons, scissors and paste. Draw a large chart on oaktag and attach it to the chalkboard.

e.g.,

Favorite Desert	
Ice Cream	
Cake	

Say, "Which would you rather have for dessert, cake or ice cream?" Ask each student to draw a picture of his/her favorite dessert and cut it out.

Point to the chart. Say, "When I call your name come to the board and paste your picture in the correct column."

After the students have completed the graph say, "We made a graph using pictures to show our favorite desserts."

STRATEGY 2: Prepare and display a flannel board, a large clown, a large tree and small pictures of trees and clowns.

Say, "Let's pretend our class is going on a trip. We can choose to go either to the circus or the park. I would like you to choose a clown or a tree to show where you would like to go. You may only choose one picture. If you would like to go to the circus, place a picture of a clown in the column below the big picture of the clown. If you would like to go the the park, place a picture of a tree in the column below the big picture of a tree." After the students complete the graph say, "We made a graph using pictures of trees and clowns to show where we would like to go on our trip."

1.12.01

1.12.01.02 **read and interpret the information given in a graph using more than two categories**

STRATEGY 1: Prepare and distribute rexographed birthday cakes. Construct a birthday chart. (A master sheet of birthdays should be available.) Say, "Let's record the number of students who have had a birthday since the beginning of school. Raise your hand if your birthday is in September." Record the totals on the chalkboard. Say, "We can make a pictograph to show our birthdays."

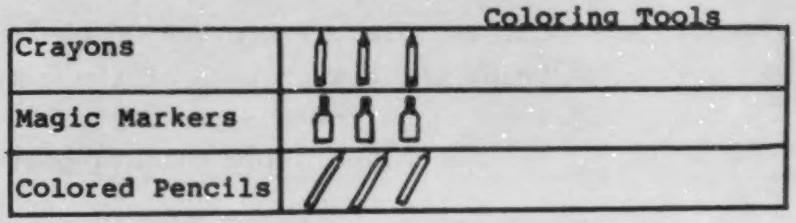
Ask the students to write their names on their cakes.

Say "If your birthday was in September, place your paper cake on the chart in the September column. How many birthdays were celebrated in September? We can find the number of birthdays in September by counting the paper cakes."

Repeat this procedure for all the months.

STRATEGY 2: Discuss objects that pupils use to color pictures, e.g., crayons, magic markers and colored pencils. Distribute a rexographed sheet containing pictures of these objects and scissors to each student. Say, "Select and cut out your favorite coloring tool." Label the bulletin board, as indicated below. Ask each student to place his/her coloring tool in the correct category.

e.g.,



1.12.01

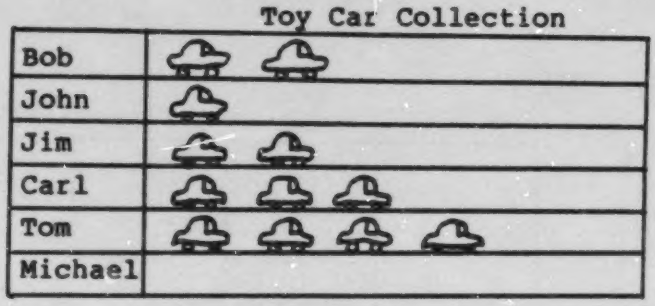
STRATEGY 2: cont'd

Ask questions about the completed pictograph, e.g., How many students like using crayons? Magic markers? Colored pencils? Which tool is the favorite?

1.12.01.03 **use information on a graph to answer questions involving more or less**

STRATEGY 1: Prepare and display this toy car collection graph. e.g.,

Toy Car Collection



Say, "What are the names of the boys who have started a toy car collection? How many cars does Carl have? Jim? Michael? Which boys have the same number of cars in their collection? How many cars do they have? Which boy has the most cars in his collection? Which boy has the least amount of cars? Who has more cars, John or Jim? Who has fewer cars, Bob or Tom? How many fewer?"

Continue this procedure using questions involving more or less.

STRATEGY 2: Adapt Strategy 1 of 1.12.01.02. Ask questions involving more and less.

P.O. 1.12.01.01

NAME: ______________________ CLASS: __________ DATE: ________

Ask five friends if they like milk or juice with their lunch. Mark their choices next to the pictures.

Favorite Drink

Milk						
Juice						

P.O. 1.12.01.02

NAME: ______________________ CLASS: ________ DATE: ________

Use tally marks to vote for your favorite fruit. Record the results. Answer the questions.

Our Favorite Fruit

🍎	
🍌	
🍐	
🍉	

How many students like 🍎? ________

How many students like 🍌? ________

How many students like 🍐? ________

How many students like 🍉? ________

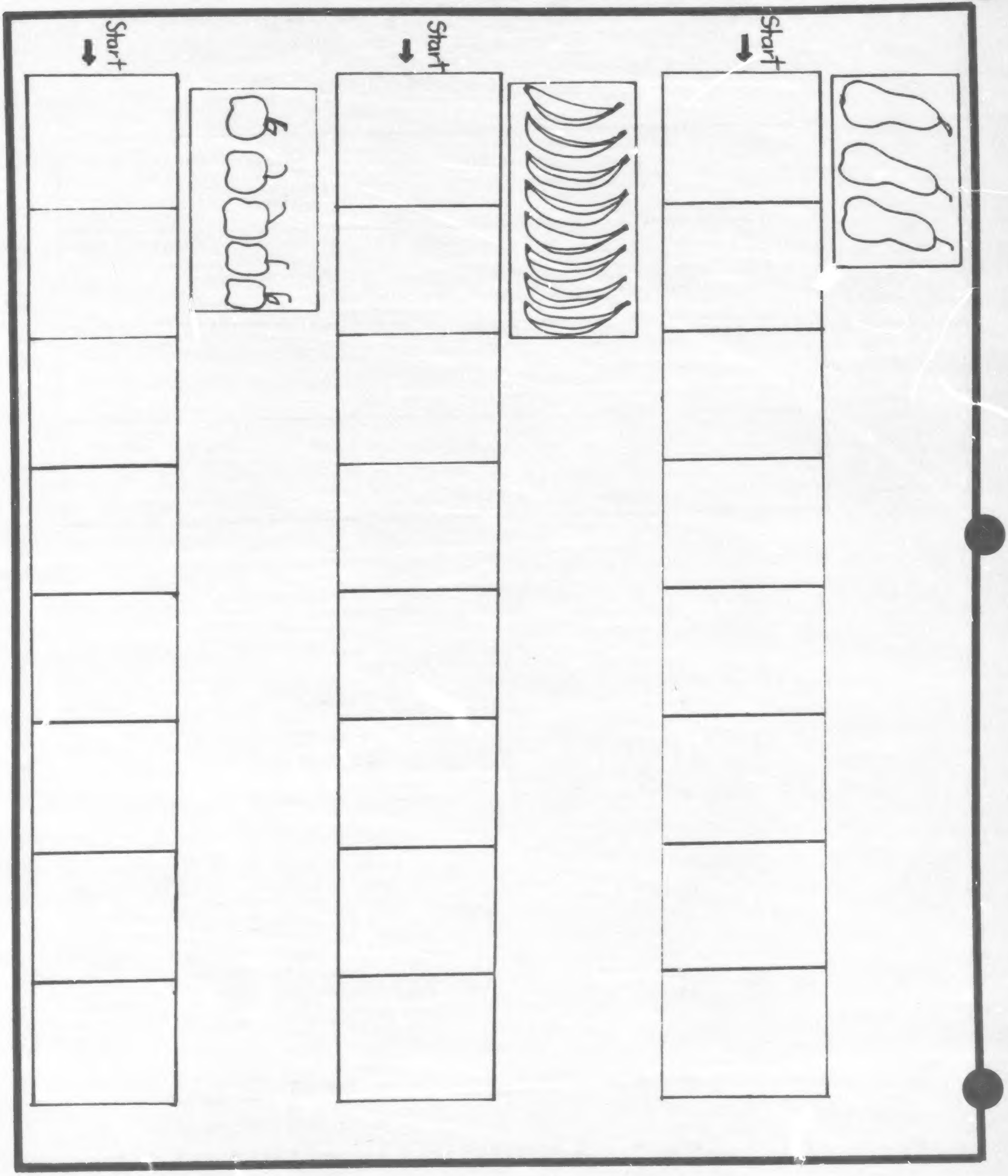
Which fruit did the students like most? ________

Which fruit did the students like least? ________

P.O. 1.12.01.03

NAME: ____________________ CLASS: ________ DATE: ________

Color a box green for each pear, yellow for each banana and red for each apple. For which fruit did we fill in the most boxes? For which fruit did we fill in the fewest boxes?

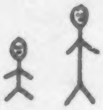
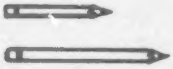
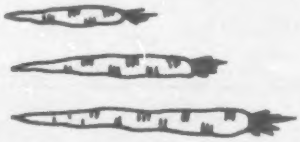
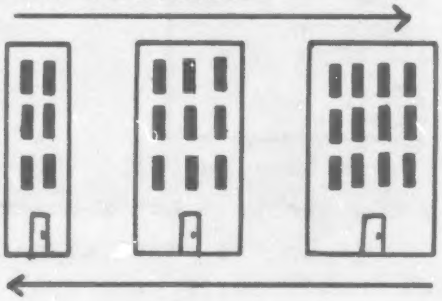


Unit 16

1.10.05 SIZE COMPARISONS

(2 lessons)

PERFORMANCE OBJECTIVES

	The student will be able to...
*1.10.05.01A	distinguish and compare objects using the terms short/tall and short/long; e.g.,  
*1.10.05.02A	distinguish and compare objects using the terms long, longer, and longest; short, shorter, and shortest and tall, taller, and tallest; e.g., 
*1.10.05.03A	distinguish and compare objects using the terms wide, wider, and widest and narrow, narrower, and narrowest. e.g., 

1.10.05

VOCABULARY

TERMS

tall
taller
tallest
short
shorter
shortest

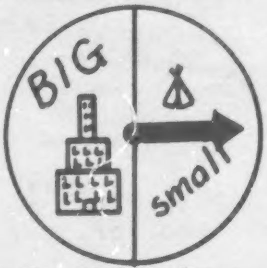
long
longer
longest
wide
wider
widest

narrow
narrower
narrowest

GETTING STARTED

Prepare a spinner using a paper plate, a brass fastener and a black oaktag arrow. Divide the plate in half using a black crayon. Write the word BIG on one side and SMALL on the other side.

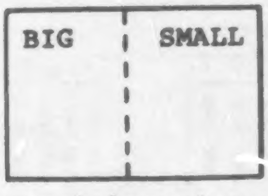
e.g.,



Allow each student to spin the spinner. He/she must name something big if he/she lands on BIG, or name something small if he/she lands on SMALL.

Prepare and distribute one large and one small circle, square, triangle, rectangle and a worksheet with the headings BIG and SMALL.

e.g.,



Say, "We each have two circles. One is big and the other is small. Find the big circle. Let's paste it under the word BIG on our paper." Hold up the small circle. Ask, "Where should we place this circle?" (Under SMALL.)

Repeat this procedure using the other shapes.

1.10.05

1.10.05.01 **distinguish and compare objects using the terms short/tall and short/long**

STRATEGY 1: Say, "Will everyone please hold up your right hand. Look carefully at your fingers. Some of your fingers are long and others are short. With your left hand, point to the finger on your right hand which is very short. Now, point to the finger which is very long."

Repeat this procedure comparing common classroom items such as pencils, books and chalk.

STRATEGY 2: Prepare and distribute pictures of short and tall objects such as trees, houses, spoons, flowers sticks, ... Ask the students to sort the pictures into two piles: tall pictures and short pictures. Tape a large sheet of newsprint to the chalkboard labeled Tall and Short. Ask the students to bring up one pair of their pictures; e.g., a tall house and a short house and tape them in the appropriate columns. When the chart has been completed, discuss the results with the students.

1.10.05.02 **distinguish and compare objects using the terms long, longer, and longest; short, shorter, and shortest; and tall, taller, and tallest**

STRATEGY 1: Prepare and tape a strip of adding machine tape to the chalkboard and prepare several other strips of paper of varying lengths. Say, "This strip of paper is long." Display the other strips of paper. Say, "Who can find a strip of paper which is longer than the one on the chalkboard?" Ask a student to

1.10.05

STRATEGY 1: cont'd

find a longer strip and tape it to the right of the displayed strip. Continue this procedure by asking students to find a shorter strip of paper, the shortest strip of paper and the longest strip of paper and taping them in the appropriate place on the chalkboard. Say, "Who can show us the longest strip of paper? Put a red X on it. Who can find the shortest strip of paper? Put a green X on it." Point to the demonstration strip. Ask, "Who can put a blue X on the strip of paper which is shorter than this one? Who can put an orange X on the strip of paper which is longer than this one?"

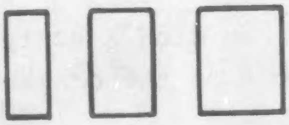
Continue this procedure changing the demonstration piece of paper.

STRATEGY 2: Prepare and distribute three cut-out trees to each student. Number the trees 1, 2, and 3. Tree 1 is the shortest and tree 3 is the tallest. Say, "We are going to play a game with our trees. Place tree number 2 in the center of your desks, and under it put the tree that is taller than number 2." Continue to give directions using only two trees to reinforce "taller" and "shorter". Introduce the third tree when you go on to the superlative terms shortest and tallest.

1.10.05.03 **distinquish and compare objects using the terms wide, wider, and widest; and narrow, narrower, and narrowest**

STRATEGY 1: Draw three rectangles on the chalkboard. Say, "I have drawn three rectangles: the first one is wide, the second one is wider and the third is the widest."

e.g.,



STRATEGY 1: cont'd

Say, "Please draw these rectangles in your notebooks by drawing the wide one first, then the wider one, and finally, the third one which is widest.

Draw three trees on the chalkboard. Point to the third tree and say, "This tree is narrow. Who can put an X on the tree which is narrower? Who can circle the narrowest tree?"

Repeat this procedure, drawing other objects on the chalkboard.

STRATEGY 2: Divide the class into three equal teams. Divide the chalkboard into three equal sections. On each section tape three rectangles of different widths. The first shape should be wide, the next one wider and the third one the widest.

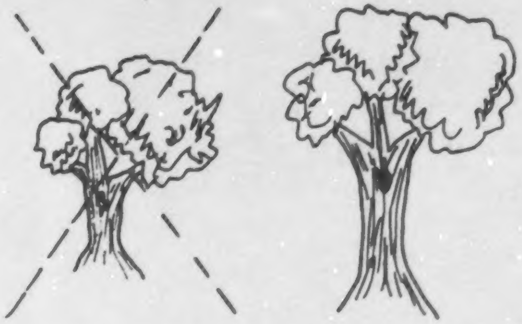
Say, "We are going to have a contest. Each student will be asked to find a certain shape. The student who is at the front of the line must hop to the chalkboard and point to the shape I name. If you are correct then you will take your seat, if you make a mistake you must return to the end of your line. The first team to have all the students seated, wins."

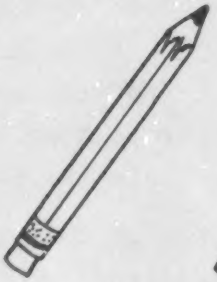
Continue this procedure until all the students on one team are seated.

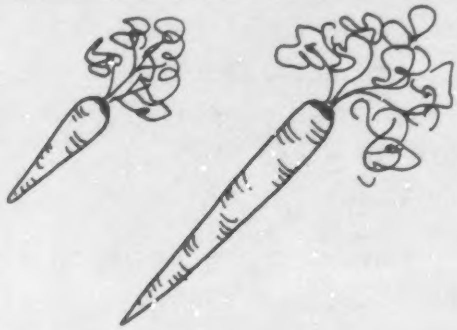
P.O. 1.10.05.01

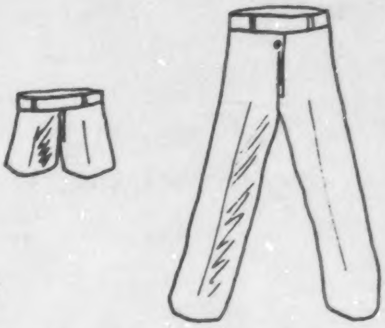
NAME: ______________________ CLASS: ______ DATE: ____

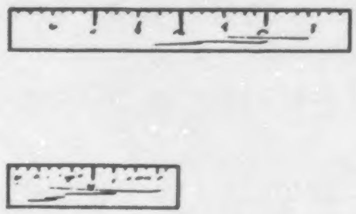
Draw an X on the item which is shorter.

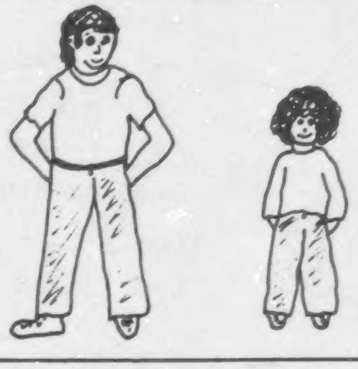


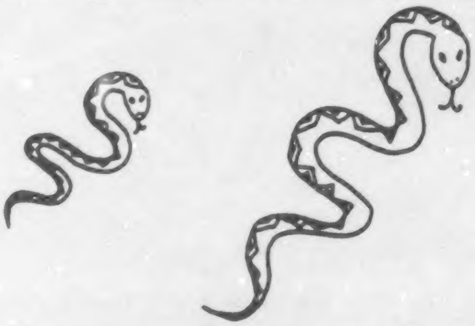


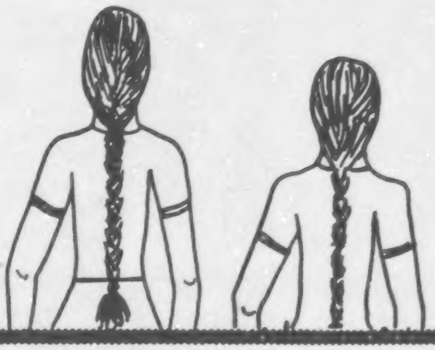








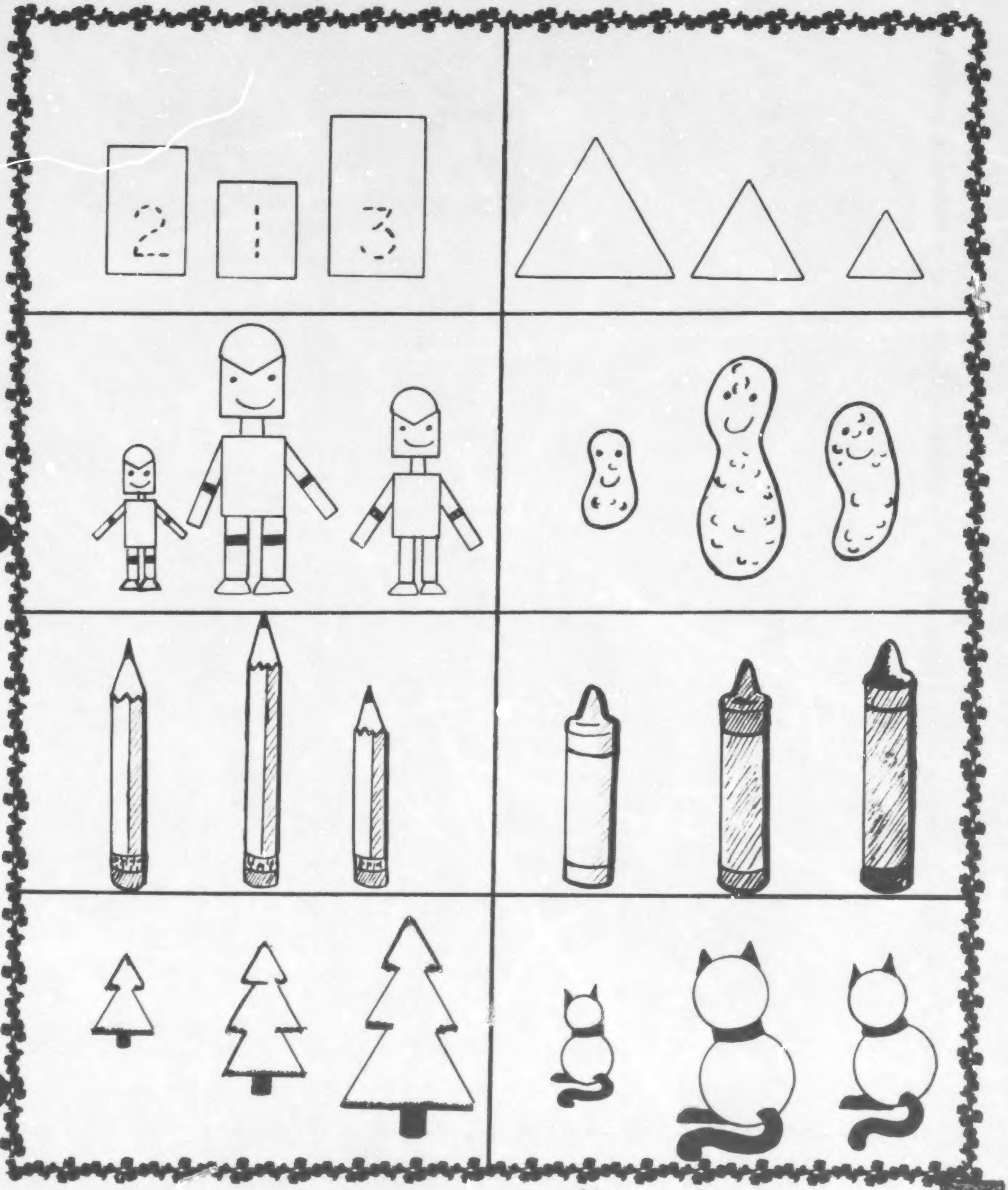




P.O. 1.10.05.02

NAME:____________________ CLASS:________ DATE:________

Number the objects 1, 2, or 3 according to size.
Number the shortest object 1.



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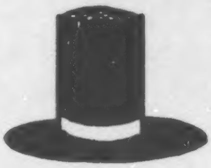
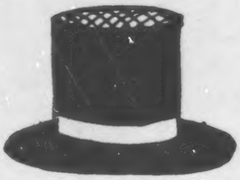
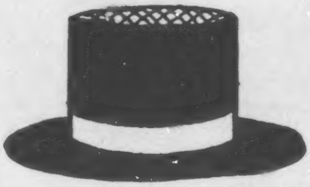
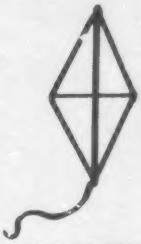
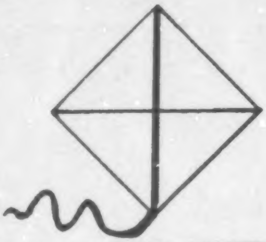
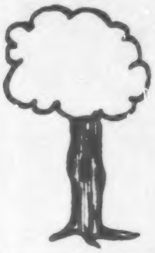
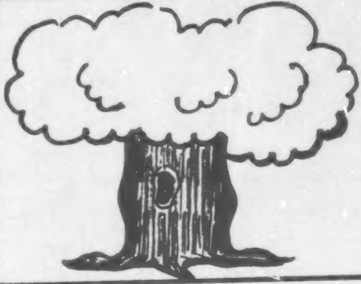
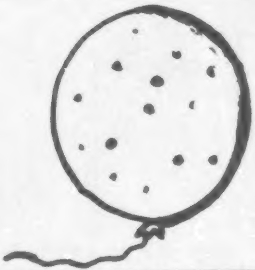
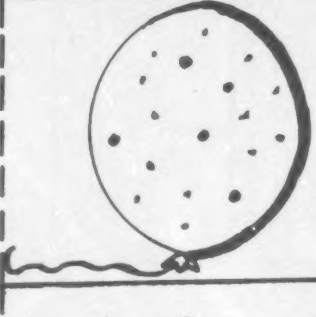
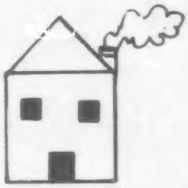
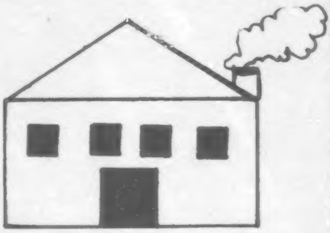
NAME: ______________________ CLASS: __________ DATE: ________

Fill in the missing object.

wide	wider	widest
		
		
		
		
		

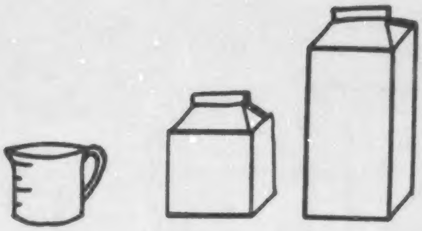
1.10.06 CAPACITY

(2 lessons)

PERFORMANCE OBJECTIVES

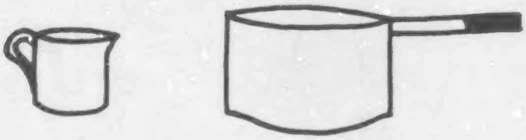
The student will be able to...

1.10.06.01B compare capacity of various size containers;
e.g.,



1.10.06.02B estimate the capacity of various size containers.
e.g.,

Estimate how many small containers of water will fill the large container?



1.10.06

VOCABULARY

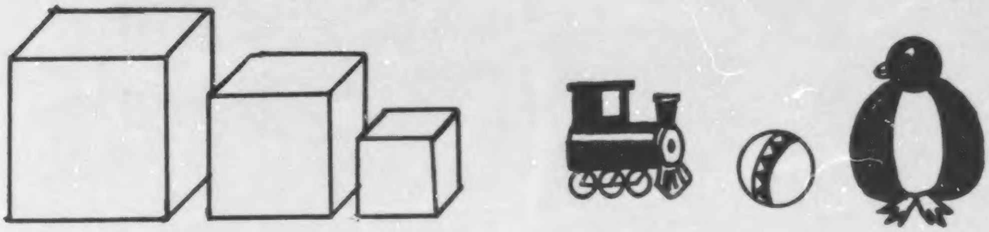
TERMS

capacity

GETTING STARTED

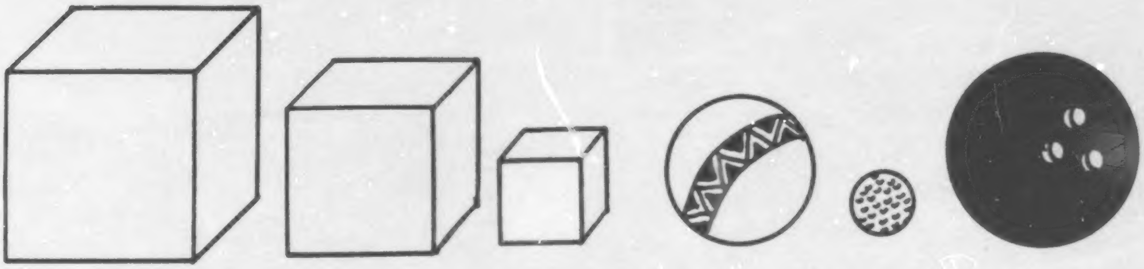
Draw several different size boxes on the chalkboard. Display pictures of various toys. e.g., (a ball, a stuffed animal and a train). Say "Imagine these toys and boxes were real. We want to wrap them up as presents. Which toy would best fit in which box?"

Continue this procedure using other pictures.



Display three different boxes and items of various sizes, e.g., balls. Show the students three balls. Say, "Within which box would these balls fit?"

Continue this procedure using other objects.



1.10.06

1.10.06.01 **compare capacity of various containers**

STRATEGY 1: Prepare and display a collection of various containers, e.g., a quart milk container, a crayon box, a cereal box, a yogurt container, a shoe box and a set of interlocking or counting cubes.

Ask a student to come up and fill one of the containers with cubes. Ask another student to choose a different container, empty the blocks from the first container and determine which container holds more.

Repeat this procedure with all the containers. Say, "Who can show us the container which held the least number of cubes? ...the greatest number of cubes? Who can arrange the other containers in the order of the amount of cubes they hold?" As the containers are arranged, ask the students why they are placing the container in that position, e.g., it holds more than this container, but less than that container.

STRATEGY 2: Prepare and display two containers of different capacities, a funnel and pourable material, e.g., water, sand or rice. Say, "Which container do you think will hold the least? ...the most? Why?" Fill the smaller container. Use a funnel to facilitate the pouring. Say, "This container is full. Now I will pour the contents of this container into the second one." Mark the level the contents of the first container reached. Say, "Does this container hold the same amount as the first one?" Continue pouring until the container is full.

STRATEGY 2: cont'd

Display two other containers of a different size and shape, but of equal capacity, e.g., a short, wide container and a tall, thin container. Say, "Which of these two containers do you think will hold the least? ...the most? Why? How can we find out?" Ask a student to fill the first container. Say, "Pour the contents of this container into the other container." As the contents are being poured, ask the students to compare the capacities of each container.

Say, "What happened? (Both held the same amount.) We cannot always tell how much a container can hold just by looking at it."

1.10.06.02 **estimate the capacity of containers**

STRATEGY 1:

Prepare and distribute to groups of students transparent plastic containers, small plastic cups, funnels and pourable material, e.g., water, sand, or rice. Say, "Which will hold more, the container or the cup? Why? How many cupfuls do you think are needed to fill this container?" Record the students' guesses on the chalkboard.

Ask students in each group to assist pouring. Say, "First fill the cup and then pour the contents of the cup into the containers. About how many cupfuls did it take to fill the containers? Whose guess was the closest?"

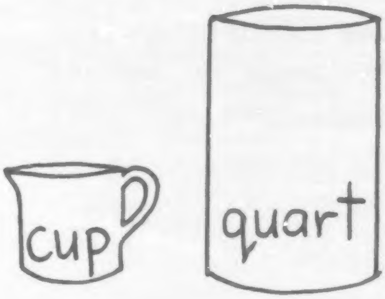
STRATEGY 2: Display the same cup and transparent plastic containers as in Strategy 1. Prepare and display one smaller and one larger container. Hold up a smaller container. Say, "We know how many cups filled the first container. Look at this container. Do you think it will hold more or less than the first container? Why? How many cupfuls do you think it will hold?"

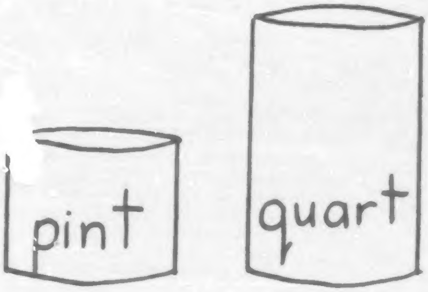
Write each student's name and guess on the chalkboard. Ask two students to assist in the pouring. Compare the results with the guesses. Continue this procedure using the larger container.

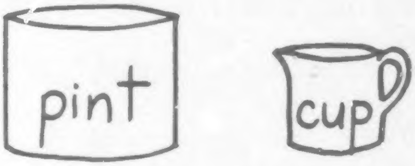
P.O. 1.10.06.01

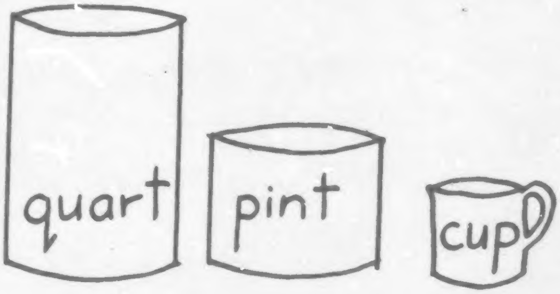
NAME: ______________________ CLASS: ________ DATE: ________

Draw an X on the container that holds more.





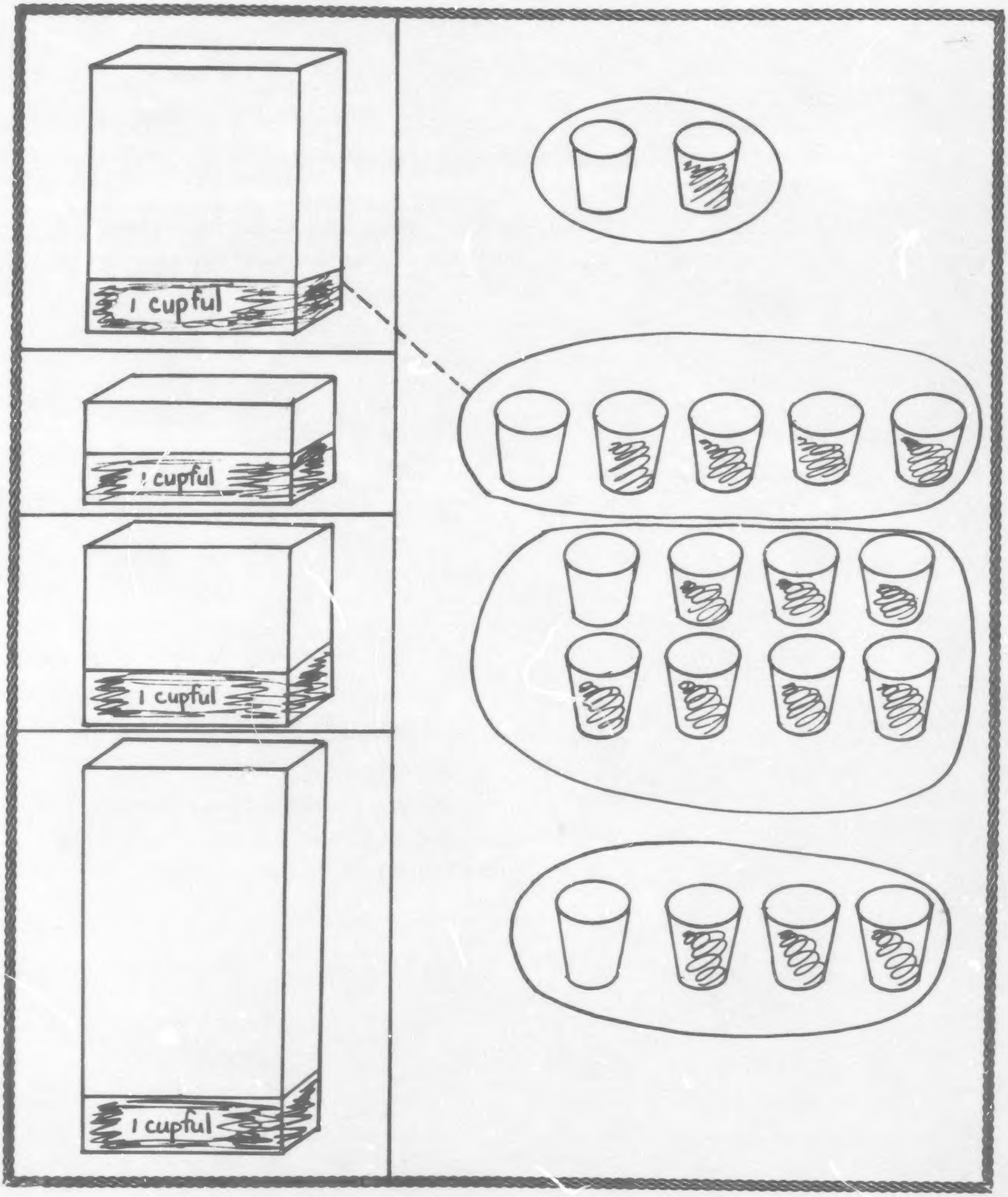



quart
pint
cup

P.O. 1.10.06.02

NAME: ______________________ CLASS: ________ DATE: ________

Match how many cupfuls each container can hold.
The first cup has been poured.


1 cupful
1 cupful
1 cupful
1 cupful

Unit 18

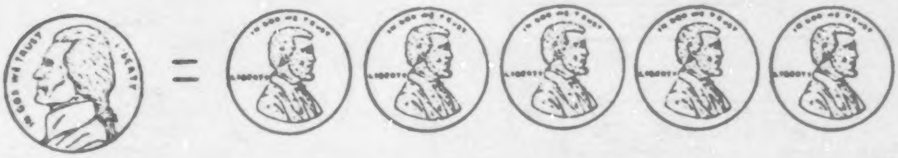
1.10.07 PENNIES AND NICKELS

(1 lesson)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.10.07.01A identify and recognize that one nickel is equivalent to the value of five pennies; e.g.,
Value of 1 nickel = value of 5 pennies.

In value 

5¢ = 5 cents

*1.10.07.02A solve story problems related to skills learned in this module.
e.g.,

James had five pennies. He
needed a nickel to buy a pretzel.
Did he have enough money?

181

1.10.07

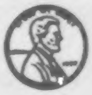
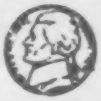
VOCABULARY

TERMS	**SYMBOLS**
penny	
cents	¢
nickel	

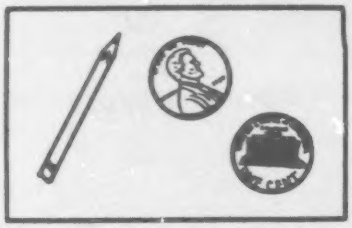
GETTING STARTED

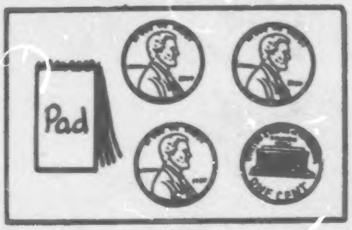
Distribute a penny and a nickel to each student. Ask each student to examine them. Develop an experience chart about pennies and nickels. Include color, size and pictures in the description. e.g.,

COINS

Picture	Coin Name	Description
	Penny	smaller than a nickel
		

Designate an area of the room as a store. Prepare and distribute twenty cards of the items for sale with their prices shown in coins, e.g.,





and play pennies. Display one of the "Items for Sale" cards. Say, "Who can buy this item from the store?" Ask one of the students to buy the item by giving you the correct number of pennies.

Repeat this procedure.

1.10.07

1.10.07.01 **identify and recognize that one nickel is equivalent to the value of five pennies**

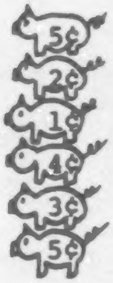
STRATEGY 1: Display the oaktag experience chart which was developed in the Getting Started lesson. Distribute a penny and nickel, or their facsimile, to each student. Review their characteristics.

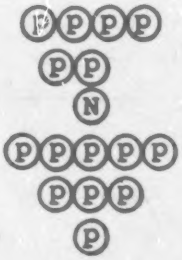
Display five pennies and a nickel. Say, "Would you rather have a nickel or a penny to buy something? Why? (One nickel is worth the same as five pennies.) We write the value of a nickel as 5¢." Write the value of the nickel on the experience chart.

STRATEGY 2: Draw a group of banks and varying amounts of money on the chalkboard. Review the value of the penny and nickel by reading the experience chart developed for coins.

e.g.,

Bank Chart





Point to the first bank. Say, "How much money is in the bank? Look at the column on the right side. Which group of coins is worth 5¢?" Ask a student to draw a circle around a group of pennies which is equivalent to a nickel. Say, "Are there any others?" Draw a line connecting the 5¢ bank to one nickel.

1.10.07

1.10.07.02 **solve story problems related to skills learned in this module**

STRATEGY 1: Say, "Every Monday through Friday John's mother gives him one penny to put in his bank. On Monday she gave him 1 penny." Ask a student to pretend to be John placing the money in the bank. Say, "How much money did John save on Monday? On Tuesday she gave him another penny." Ask another student to deposit a penny. Say, "How much money does he have now?" Repeat this procedure until there are five pennies. Say, "John's bank became very heavy by Friday. He had five pennies. What coin could he trade for the five pennies?"

Repeat this procedure by inventing other stories for the students to dramatize and solve.

STRATEGY 2: Draw this purchase chart on the chalkboard.

Item		Coins
pencil	1¢	1¢
balloon	4¢	1¢ 1¢ 1¢ 1¢
lollipop	3¢	
mint	2¢	
cookie	5¢	

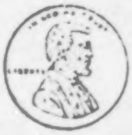
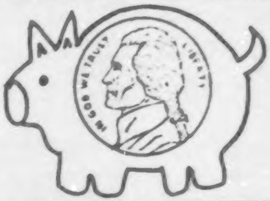
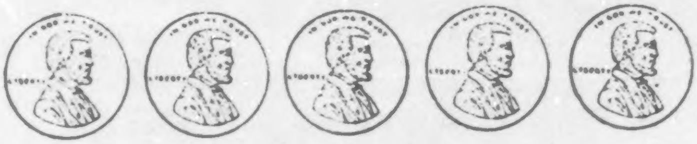
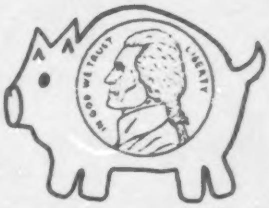
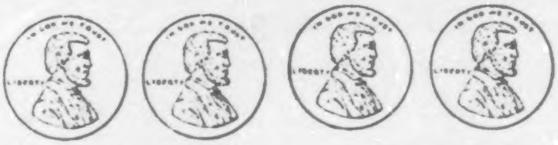
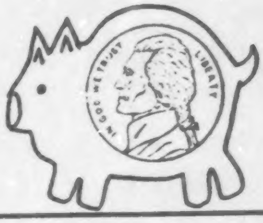
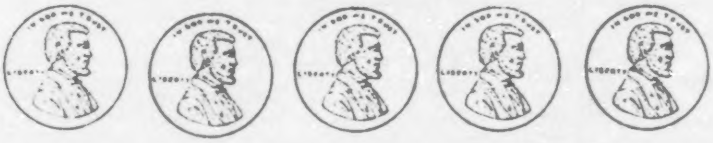
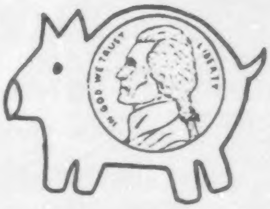
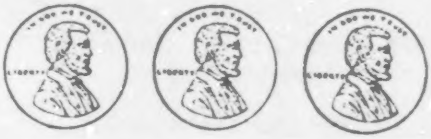
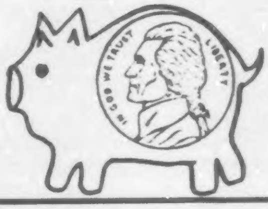
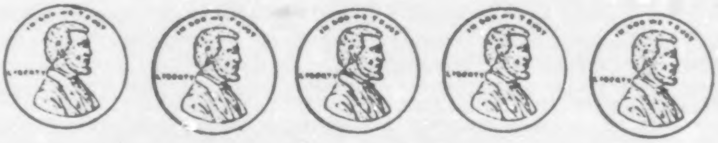
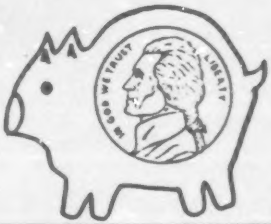
Say, "Look at the first item (pencil). How much is it? What coins do we need to buy it?" Ask a student to tape a paper penny in the coin column. Say, "Look at the balloon. How much does it cost? Which coins do we need to buy it?" Ask a student to tape the coins in the proper column.

Repeat this procedure taping the coins for each item to the chart.

P.O. 1.10.07.01

NAME:____________________ CLASS:________ DATE:________

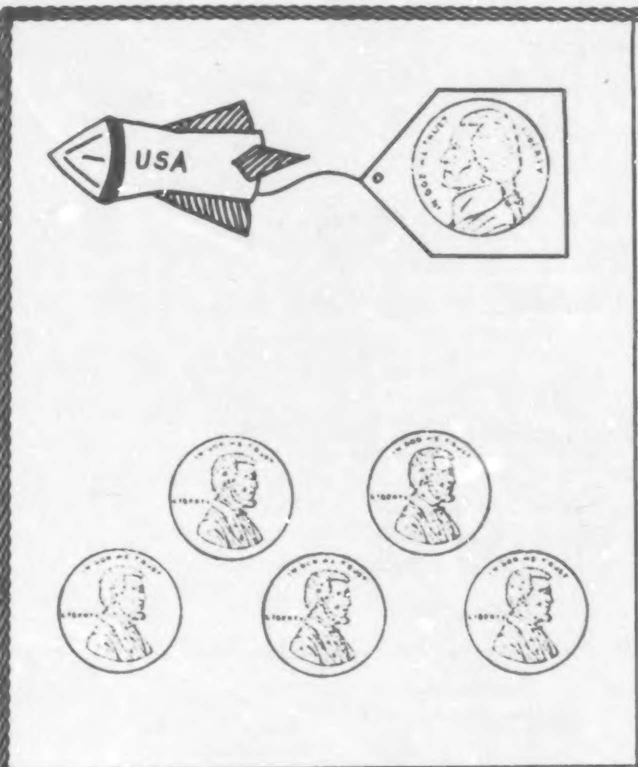
Put an X on the lines that show the same amount of money.

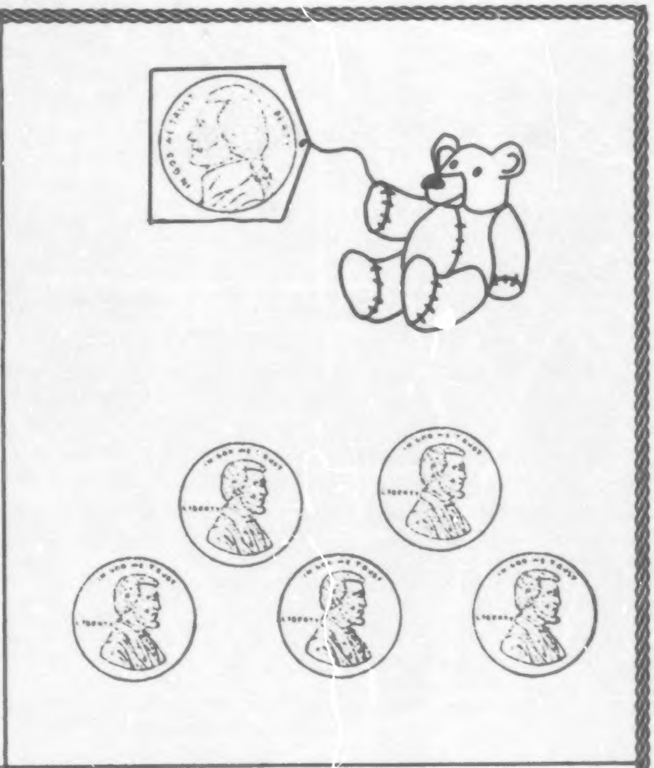
	
	
	
	
	
	

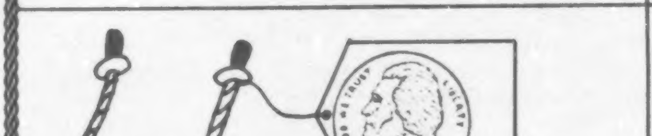
P.O. 1.10.07.02

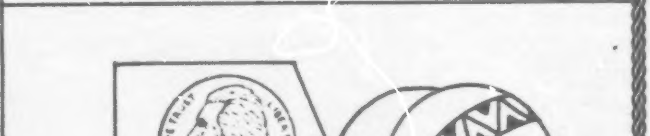
NAME: ______________________ CLASS: __________ DATE: __________

All the toys cost one nickel. Put an X on the boxes which show enough pennies.







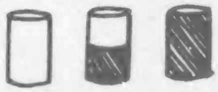
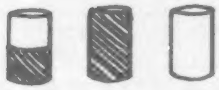


1.10.08 MEASURE CAPACITY

(1-2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.10.08.01A	define and compare full, half full, and empty; e.g., Which container is full?  Which container is half full? Which container is empty? 
1.10.08.02B	recognize a liter. e.g., 1 liter beverage container

1.10.08

VOCABULARY

TERMS

can
containers
empty
full
half full
liter
metric measure

GETTING STARTED

Prepare and display a variety of containers.

e.g.,

box, shoe box, milk container, plastic shampoo bottle, cereal box and orange juice container

Say, "What are these called? What do we use them for?" Discuss the contents of each one. Ask a student to sort the containers in some way and describe the sorting to the class. e.g., size.

Continue this procedure until the children have sorted the containers in several different ways.

Display containers made of paper, plastic, glass and tin. Discuss the possible contents of each container. Say, "Would you put water in this cereal box? Why or why not? Would you put a baseball in this soda bottle? Why or why not? In which containers would you be able to put toy cars?"

Summarize these findings on a chart.

e.g.,

Containers come in different sizes and shapes.

They can be made from many materials.

Some containers have large openings and others have small openings.

1.10.08

1.10.08.01 define and compare full, half full, and empty

STRATEGY 1: Prepare and display a crayon or paper clip box and distribute other containers holding different quantities to each student. Ask the students to identify the contents without opening the box. Say, "How can you tell what is in your box without opening it? How can we tell how much is in each box?" Discuss the possibilities with the students. e.g., "We can hold it and feel the weight. We can shake it and hear if anything is inside. We can open it and look inside."

Say, "Who thinks he/she has a box which is full?" Ask a student to display the contents of his/her container. Say, "Were you correct when you said your box was full? How did you know? Who thinks he/she has a box which is empty? Why do you think your box is empty?" Ask the student to open the box to see if he/she was correct. Say, "Who has a box that is not empty but not full? What makes you think so?" Ask the student to open his/her box and check. Continue this procedure with other students.

STRATEGY 2: Prepare and distribute newsprint, three identical containers, a pencil and pourable material e.g., rice, sand, barley, to each group of three students. Say, "Who can tell us something about these containers?" Display a funnel and discuss its purpose. Demonstrate how to use the funnel. Say, "One student will hold the container. One student will hold the funnel in place. Another student will slowly and carefully pour the rice into the funnel until the rice is almost to the top

1.10.08

STRATEGY 2: cont'd

of the container. We started with an empty container. Is the container still empty? (No) The container is now full. We poured the rice almost to the top." Display another empty container. Say, "Who would like to show us where halfway up the container would be?" Discuss the fact that halfway means that there is the same amount of space above and below the spot to which we are pointing. Ask a student from each group to fill another container until it is half full. Compare the three containers. Say, "Who can show us the containers which are half full, full, empty?" Call on different students to locate containers in the classroom which are empty, half full or full.

1.10.08.02 recognize a liter

STRATEGY 1:

Display a variety of containers. Hold up a liter container and say, "This is a liter container. A liter is the metric unit used to measure liquid."

Fill the liter container with water that has been tinted with food coloring. Ask a student to select a container. Say, "Look at our containers. Do you think your container will hold less, more or about the same amount as the liter container? Why?" Assist the student in filling the selected container with the contents from the liter container. Determine whether the student's statement was correct. Say, "Does the container hold less than, more than or the same amount as the liter container?" Continue this procedure with the other containers.

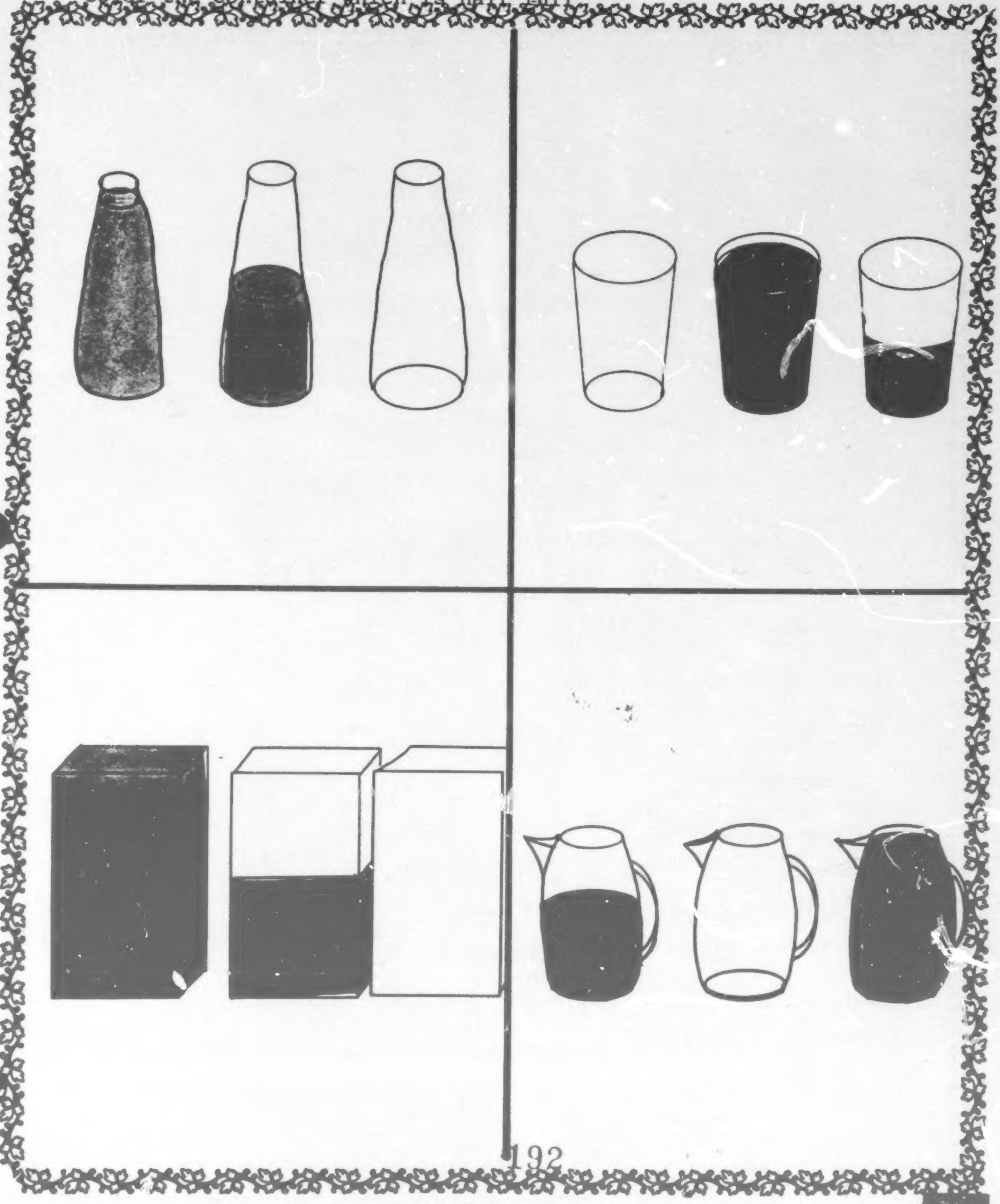
1.10.08

STRATEGY 2: Display a variety of containers and a liter container filled with water which has been tinted with food coloring. Hold up the liter container. Say, "This container holds one liter of liquid." Ask a student to assist you in pouring the water into a different container. Make a line on the container at the water level. Say, "This container holds more than a liter. This line shows where one liter of liquid would come to in this container." Repeat this procedure with other containers, e.g., two liter bottle, a bleach bottle, a large container.

P.O. 1.10.08.01

NAME:____CLASS:________DATE:_______

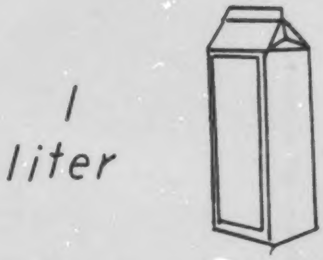
Draw a ring around the container which is full.
Put an X on the container which is empty.
Color the container which is half full.

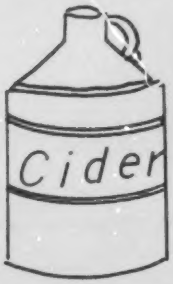


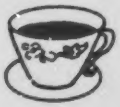
P.O. 1.10.08.02

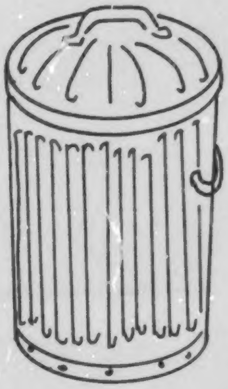
NAME: ______________________ CLASS; ______ DATE: ______

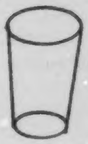
Draw a ring around the containers which hold more than a liter.
Put an X on the containers which hold less than a liter.

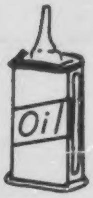


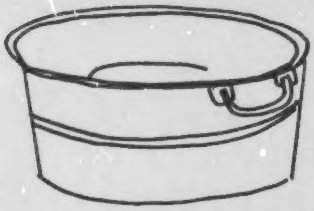


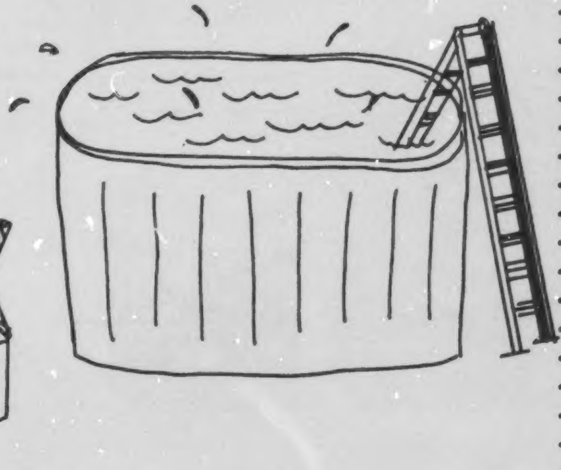


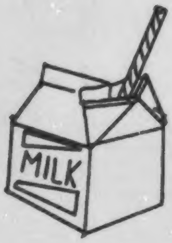












79

Unit 20

1.10.09 TEMPERATURE

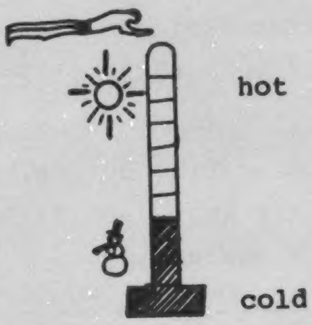
(1-2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.10.09.01A read a thermometer using non-numerical expressions;

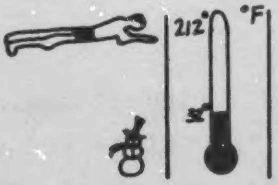
e.g.,



Is it hotter or colder than yesterday?

1.10.09.02B identify the degrees for the freezing point (32°F) and the boiling point (212°F) of water on a Fahrenheit thermometer.

e.g.,



What temperature on the thermometer shows when water would freeze?

1.10.09

VOCABULARY

TERMS	SYMBOLS
Fahrenheit	F
thermometer	
temperature	
degrees	°
rise	
fall	
freezing	
boiling	

GETTING STARTED

Display actual measuring devices or pictures of measuring devices such as rulers, yardsticks, tape measures, meter sticks, scales, balances, and clocks.

Point to each measuring device. Ask the students for the name of each device. Ask what each device measures. Write an experience chart about the discussion.

Teach the following poem to the students.

Whether

Oh weather, oh weather,
Oh whether or not.
To wear something cool,
Or wear something hot.
How can I tell,
How can I know?
Will it be sunny,
Or will it snow?

Blanche Solomon

Prepare and display a flannel board, two flannel-backed figures (boy and girl) and flannel backed clothing; e.g., a bathing suit, sunglasses, straw hat, snowsuit, boots, mittens, sandals, woolen hat and scarf. Say, "We are going to dress the children for a hot/cold day. Think about the type of clothing you wear in

GETTING STARTED
cont'd

certain kinds of weather." Ask students to place items of clothing on the figures. Say, "Do you think these children are dressed properly? Why? (Elicit that certain types of clothing belong together.) What kind of weather is this child dressed for? How can you tell?"

Distribute drawing paper and ask each child to draw her/himself properly clothed for a hot day and for a cold day.

1.10.09

1.10.09.01 **read a thermometer using non-numerical expressions**

STRATEGY 1: Prepare and display a large oaktag thermometer with a movable red and white ribbon. Label the top HOT and the bottom COLD. Prepare and distribute a precut illustrated oaktag number line with holes at the top and bottom. Distribute red and white strings. Say, "We are going to make thermometers to show hot and cold. Put your string through the holes on the oaktag. Attach one end of the white string to one end of the red string by knotting them together. Tie the ends in the back of the oak tag tight enough so that the string can move."

Place the red ribbon near the designation HOT on the large demonstration model. Say, "The higher the red ribbon reaches, the hotter or warmer it is. The lower the red ribbon, the colder it is."

Show pictures such as ice cubes, boiling water, coffee, ice cream,... Ask the students to move the strings on their thermometers to show if these things are hot or cold.

STRATEGY 2: Prepare and display seasonal pictures depicting extremes in temperature and a large oaktag thermometer. Say, "We are going to look at some pictures to see whether they show cold or warm temperature." Display a summer picture of a youngster swimming. Say, "Is the weather hot or cold? Should we tape the picture near the upper or lower end of the thermometer? Why?"

Repeat this procedure with other seasonal pictures.

1.10.09

1.10.09.02 identify the degrees for the freezing point (32°F) and the boiling point (212°F) of water on a thermometer

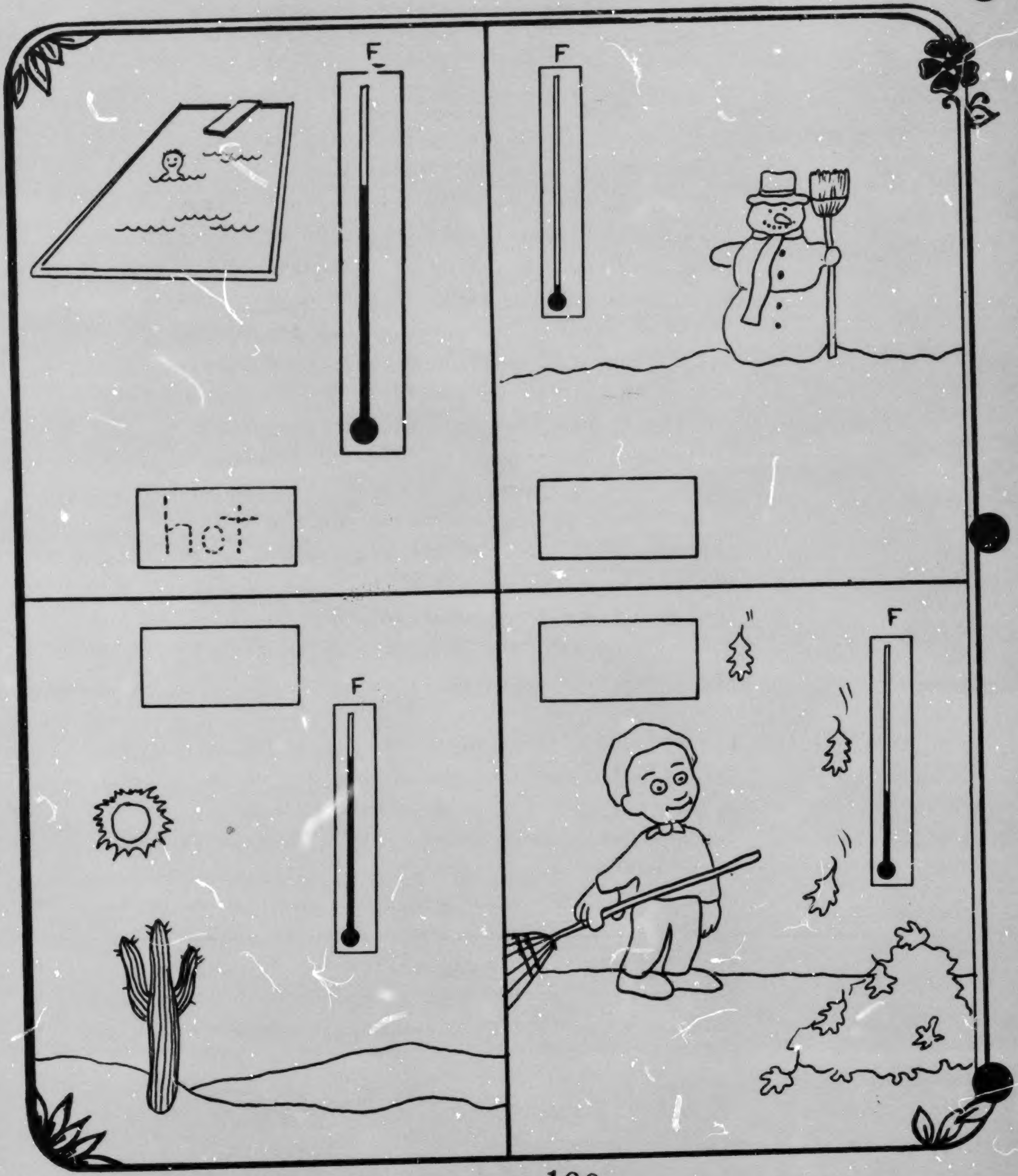
STRATEGY 1: Prepare and display a large oaktag Fahrenheit thermometer with a movable ribbon, a real Fahrenheit thermometer and individual thermometers. Fill several containers with water at different temperatures, e.g., from an ordinary cold or hot water tap, boiling water (heated on a hot plate) and iced water. Place the actual thermometer in the various containers and record the degrees by moving the ribbon on the large oaktag thermometer. Ask the students to move the ribbons on their thermometers to the corresponding degree. Say, "What was the temperature of the boiling water? (212°) Who can read the number on the real thermometer? What was the temperature of the iced water? (32°) We say that water boils at 212° Fahrenheit and freezes at 32° Fahrenheit." Ask the students to mark the boiling and freezing points on their individual thermomters.

STRATEGY 2: Prepare and display pictures of a steaming cup of tea, a pot of boiling water, a glass of ice cubes, an icicle, an ice pop, a radiator and a demonstration thermometer. Say, "When it is hot, where would the red line be on the thermometer? When it is cold, where would the red line be on the thermometer? Which of these pictures show a hot temperature? ...cold temperature?" Discuss each picture with reference to freezing point (32°F) and boiling point (212°F). Ask the students to draw pictures of liquids which boil or freeze.

P.O. 1.10.09.01

NAME:__________________________________CLASS:_________DATE:________

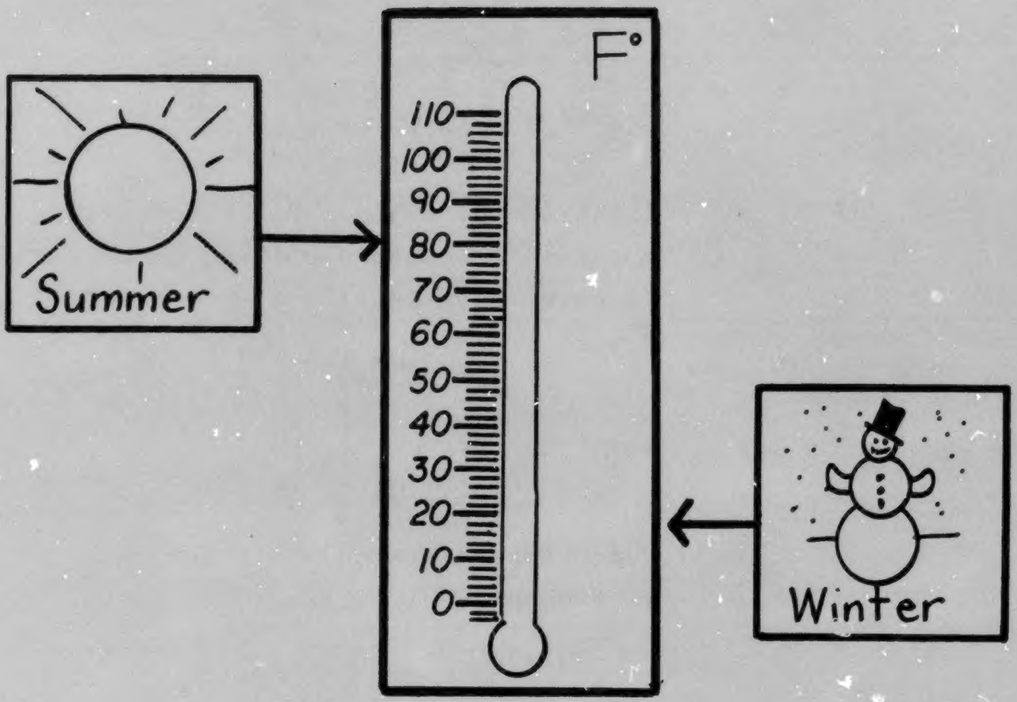
Write hot or cold.

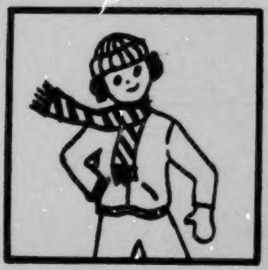


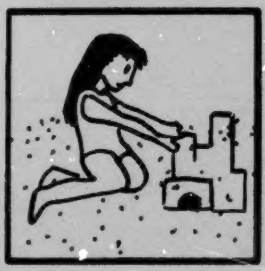
P.O. 1.10.09.02

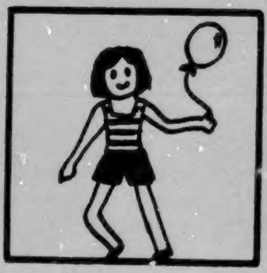
NAME: ______________________ CLASS: ________ DATE: ________

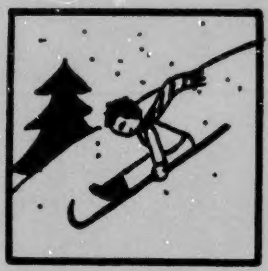
Match the pictures to the season.


Summer
F°
110
100
90
80
70
60
50
40
30
20
10
0
Winter









1.10.10 TEMPERATURE-CELSIUS

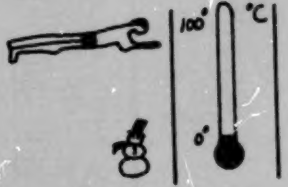
(1 lesson)

PERFORMANCE OBJECTIVES

The student will be able to...

1.10.10.01B identify the degrees for the freezing point (0°C) and the boiling point (100°C) of water on a Celsius thermometer.

e.g.,



What temperature on the thermometer shows when water would freeze?

1.10.10

VOCABULARY

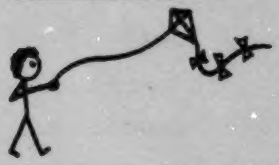
TERMS	SYMBOLS
Celsius	C
degrees	°
thermometer	
mercury	
zero	
freezing point	
boiling point	

GETTING STARTED

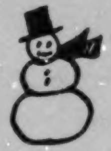
Prepare and display a chart entitled, A Thermometer Measures. Say, "How many students have been ill and have had a fever? How did your mother learn how high your temperature was?" (She used a thermometer.) Write the words body temperature on the chart. Say, "What else can a thermometer measure?" Discuss and list students' responses to complete the chart.

Prepare and display seasonal pictures, e.g., a snowman, children swimming, a child flying a kite... Write the following headings on the chalkboard.

Warm (Hot)



Cool (Cold)



Hold up one picture and say, "What is this? (a snowman) Would you see the snowman in warm weather or cold weather?" Tape the picture in the correct column.

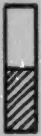
Repeat this procedure until all of the pictures have been properly placed.

1.10.10

1.10.10.01 identify the degrees for the freezing point (0°C) and the boiling point (100°C) of water on a Celsius thermometer

STRATEGY 1: Prepare and distribute a scissor, glue, a piece of oaktag 4" x 8$\frac{1}{2}$", red and white construction paper $\frac{1}{4}$" wide x 9" long, and the Celsius thermometer pattern found on workbook page 27a to each student. Say, "Cut out the pattern and glue it to the white paper." Guide students to fold the pattern along the dotted line. Demonstrate how to cut the slits at the top and bottom of the thermometer. Say, "Glue the white strip of paper to the red strip of paper."

e.g.,



Demonstrate how to thread the strip through the slits of the thermometer. Say, "What are the parts of the thermometer?" (Numerals, mercury, bulb, degrees.) Discuss the numerals on the Celsius thermometer. Say, "Put your finger on zero degrees. That is the freezing point. Pull your strip so that the red part is just under the 0° line. When do you think the temperature would be zero degrees?" (When it is very cold outside, when we freeze water, when we make ice cream.)

Say, "Put your finger on one hundred degrees. That is the boiling point. Pull your strip so that the red part is just under 100°. When might we find that temperature?" (When we boil water for tea, when steam escapes from a pot.)

Name various things and ask the students to pull their strips to 0° for freezing or 100° for boiling, e.g., a frozen ice pop, a cup of tea, a whistling tea kettle, a snowman,...

STRATEGY 2: Prepare a bowl of ice cubes, a pan of water and a hot plate. Display a large Celsius thermometer. Fill a bowl with ice cubes. Insert the thermometer in the bowl and ask several students to read the temperature to the class. Say, "The cubes are frozen. Zero degrees is the freezing point on the Celsius thermometer."

Fill a saucepan with a small amount of water. Heat the water in the pan on a hot plate. When the water is boiling, turn off the hot plate. Place your Celsius thermometer in the water. Remove the thermometer and ask students to read the temperature. Say, "Water boils at one hundred degrees Celsius. One hundred degrees is the boiling point on the Celsius thermometer."

Write an experience chart to summarize the lesson. e.g.,

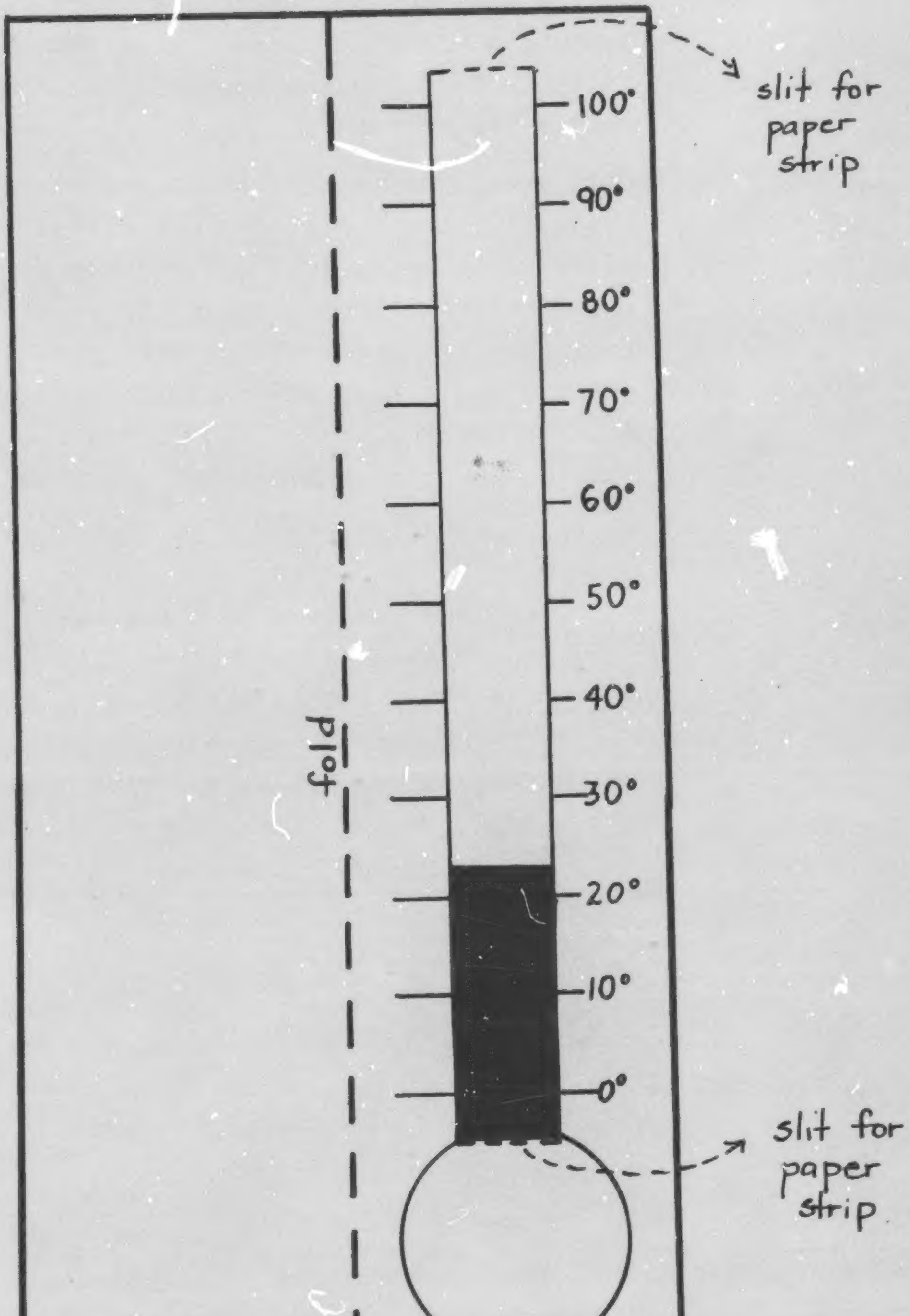
> We used the Celsius thermometer. We put the thermometer in ice cubes. The temperature was 0°C. 0°C is the freezing point. We put the thermometer in boiling water. The temperature was 100°C. 100°C is the boiling point.

P.O. 1.10.10.01

NAME:________________________________CLASS:________DATE:________

TEACHER: Cut out and use with P.O. 1.10.10.01 Strategy 1.

4

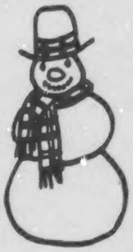
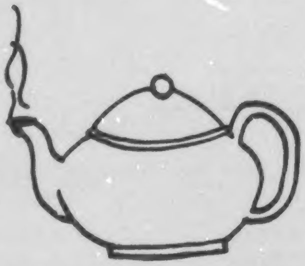
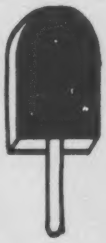
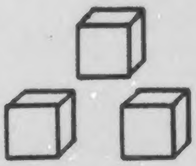
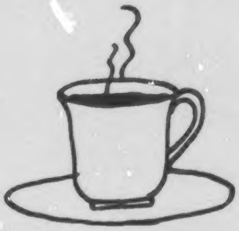
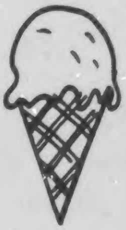
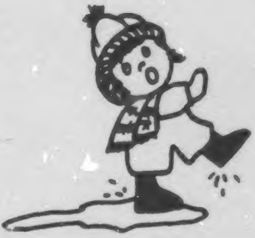
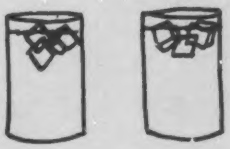


100°
90°
80°
70°
60°
50°
40°
30°
20°
10°
0°
fold
slit for paper strip
slit for paper strip

P.O. 1.10.10.01

NAME: ______________________ CLASS: ________ DATE: ________

Write 100°C or 0°C on each line.

 ________	 ________
 ________	 ________
 ________	 ________
 ________	 ________

Unit 22

1.13.01 USE DRAWINGS TO REPRESENT OBJECTS

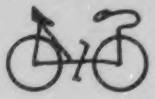
(1-2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

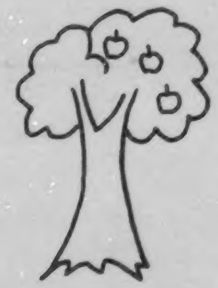
*1.13.01.01A fill in the missing part of a picture; e.g.,

Put wheels on a bicycle.



*1.13.01.02A make drawings to represent objects in a picture.
e.g.,

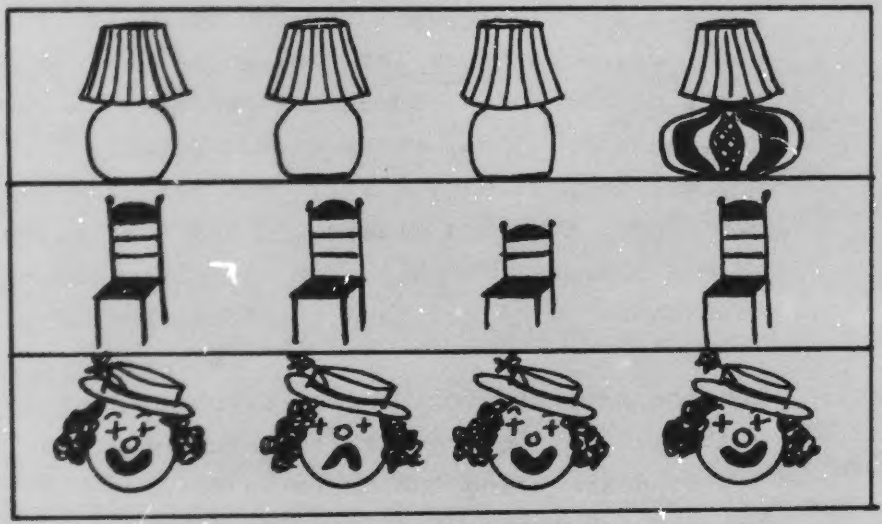
There are three red apples on the tree.



GETTING STARTED

Prepare and display a picture. Say, "Who would like to tell us what they see in this picture?" Call on several students to give their interpretations.

Prepare and display pictures of lamps, chairs and clowns.
e.g.,



Say, "Which lamps are the same? Which one is not the same? How are they different?"

Continue this procedure with the other pictures.

1.13.01

1.13.01.01 **fill in the missing part of a picture**

STRATEGY 1: Play the game "What's Missing?" Prepare and display five different objects. Ask the students to identify them. Ask all of the students to close their eyes. Remove one object. Ask the students to open their eyes and name the object that is missing. Replace the object and continue this procedure.

Prepare and display a large incomplete picture of a clown drawn on newsprint. Draw the various missing parts of the body separately: an eye, an ear, an arm, a hand, a leg, and a shoe. Display them on the chalkboard ledge. Say, "Who can name something our clown, Koko, is missing?" Ask the student to select the missing part from the selection on the chalkboard ledge and tape it on the picture.

STRATEGY 2: Ask the students to turn to worksheet page 28a. Discuss each picture with the students. Say, "Can you find something the table is missing? Fill in the missing parts with your pencil."

Repeat this procedure to complete the page.

1.13.01.02 **make drawings to represent objects in a picture**

STRATEGY 1: Say, "Listen to my story. One day Jerry was looking out the window. He saw a tree with apples on it. He counted the apples. One, two, three. There were three red apples on the tree. Jerry went into the kitchen. He looked at the table. On the table he saw two boxes. He looked under the

STRATEGY 1: cont'd

table and saw the ball he was looking for. He took the ball from under the table and went outside to play. When he walked past the apple tree he saw only two apples on the tree. 'What happened to the other apple?' Jerry asked himself. He walked around the tree and there, on the ground, he saw the other apple."

Ask the students to turn to worksheet page 28c. Say, "Look at the pictures: a tree, a table, a table, a tree. I will read this story again. We will draw in the missing pictures." Reread the story. Say, "Look at the first picture of the tree. What did Jerry see on the tree? How many apples did he see? What color were the apples? Draw three red apples on the tree."

Repeat this procedure to correspond with the facts in the story.

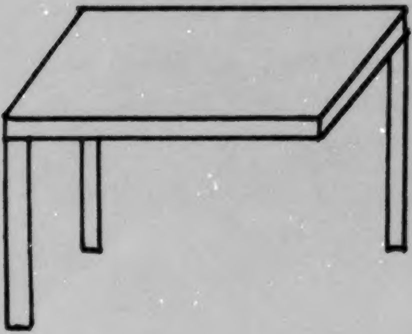
STRATEGY 2:

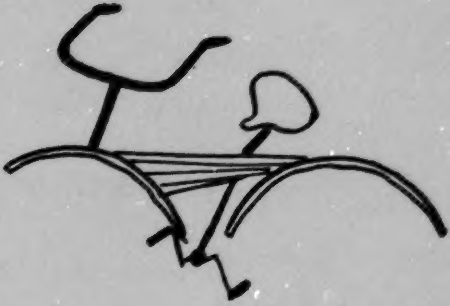
Distribute crayons and use worksheet page 28d. Say, "Let's pretend that we are in a toy store. Look at your worksheet while I tell you what is on the shelves. On the top shelf there is a big, blue ball. Draw the big, blue ball on the top shelf. On the bottom shelf there is a green kite. Draw the green kite on the bottom shelf. On the middle shelf, we see a yellow truck. Draw the yellow truck on the middle shelf."

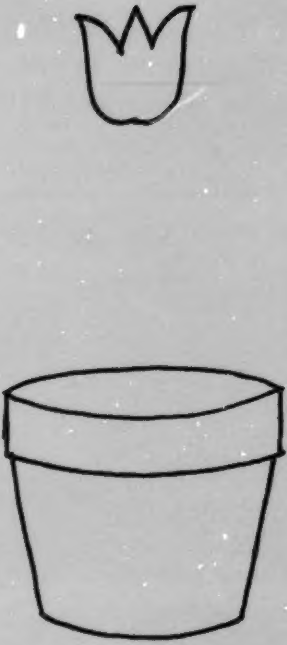
P.O. 1.13.01.01

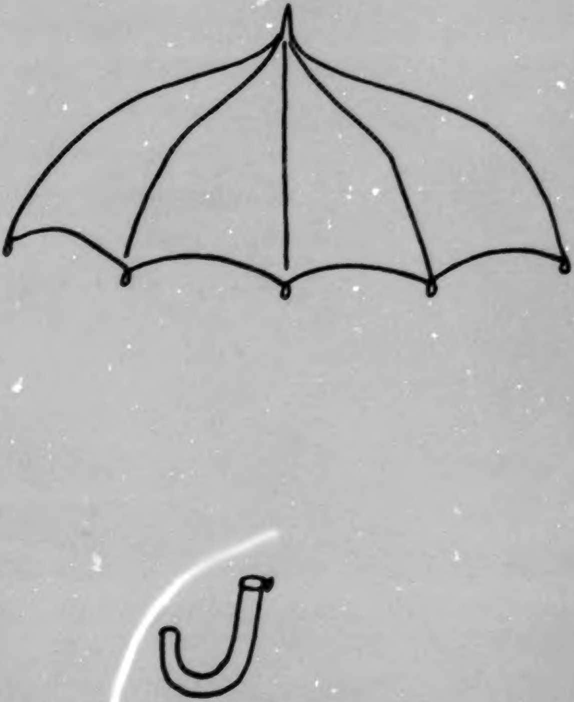
NAME: ____________________ CLASS: ________ DATE: ________

Look at each picture. Fill in the missing part.
Color the pictures.





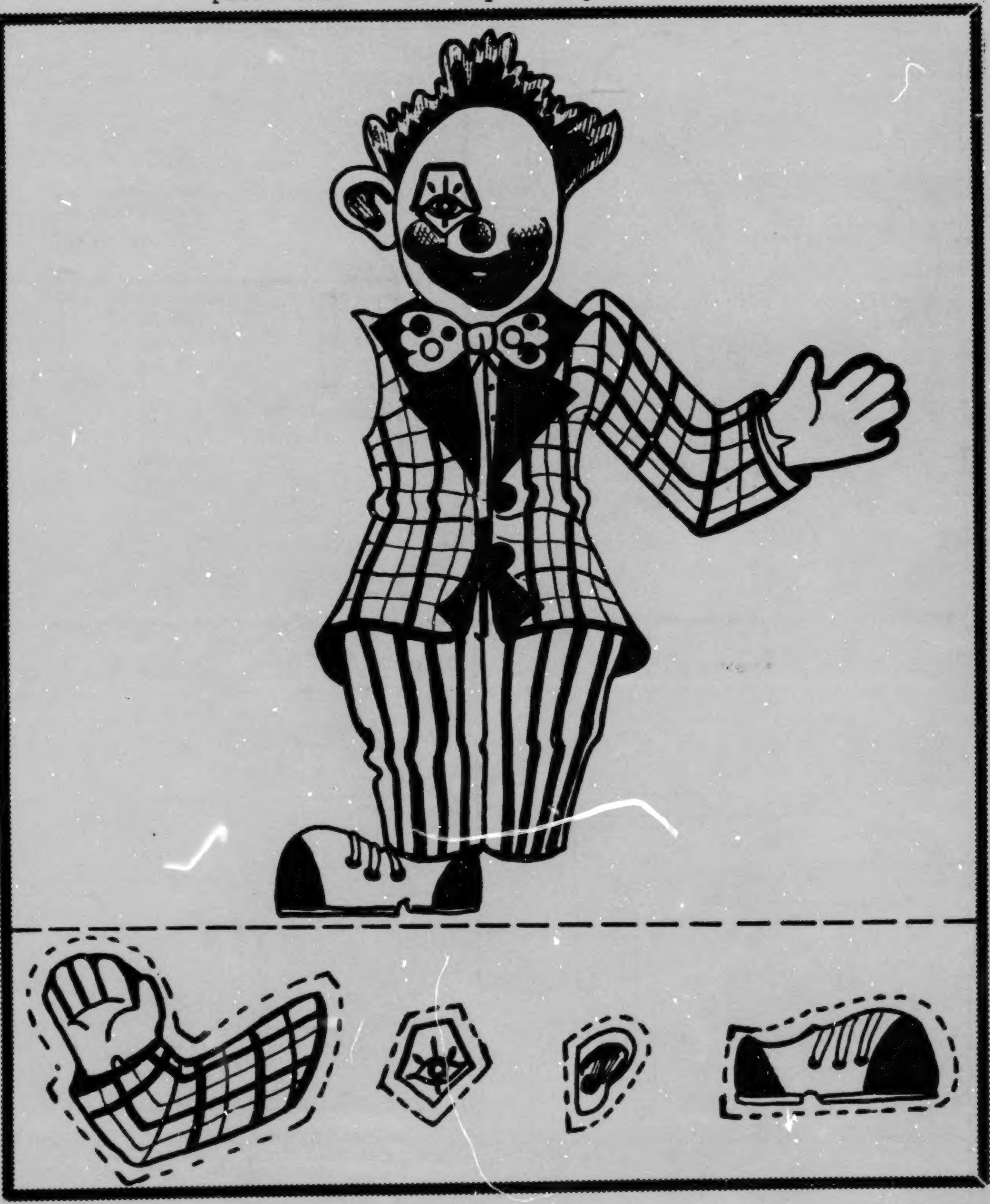




P.O. 1.13.01.01

NAME:____CLASS:_________DATE:_______

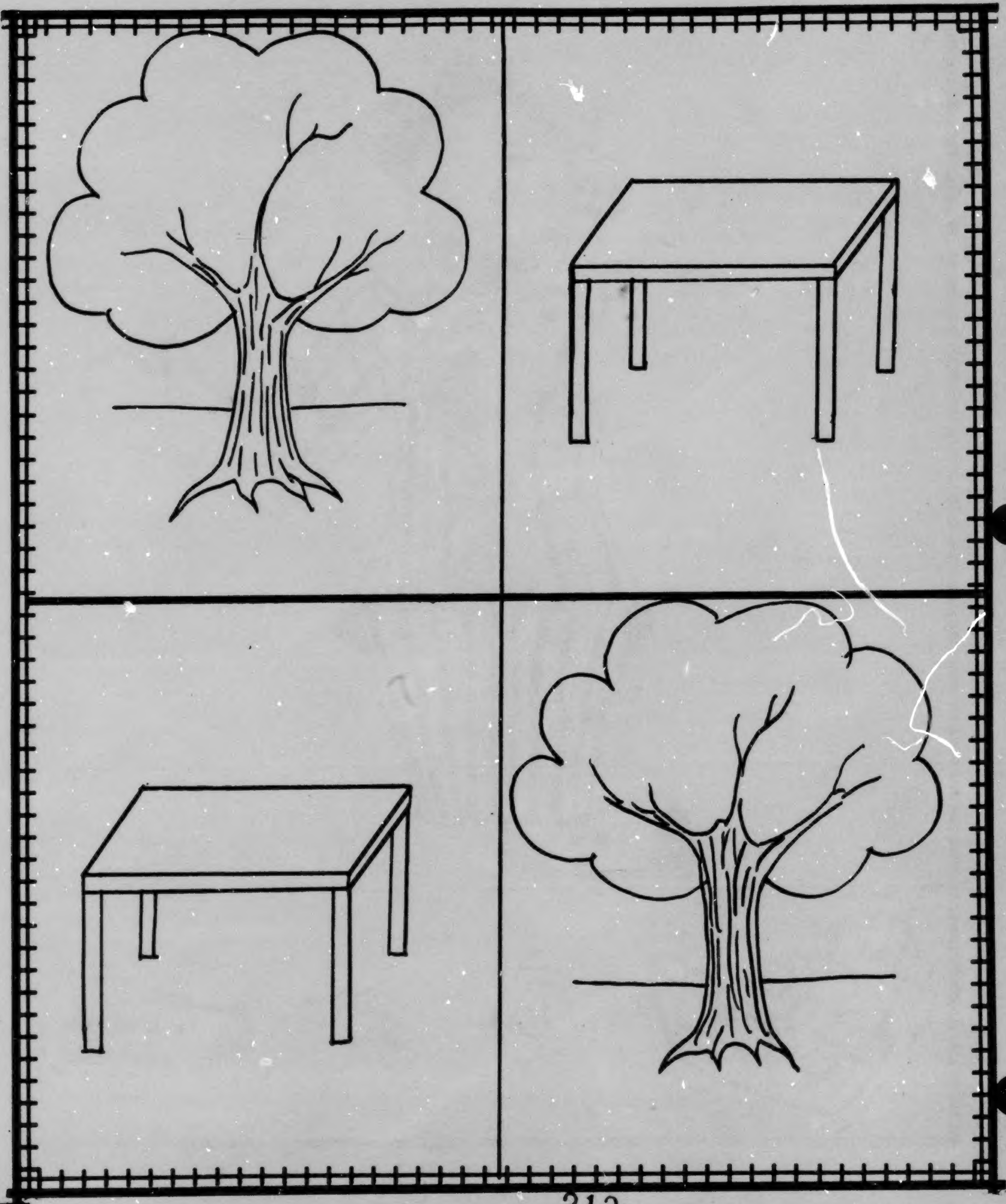
What is the clown missing? Cut out the parts and paste them where they belong.



P.O. 1.13.01.02

NAME: ______________________ CLASS; ________ DATE: ________

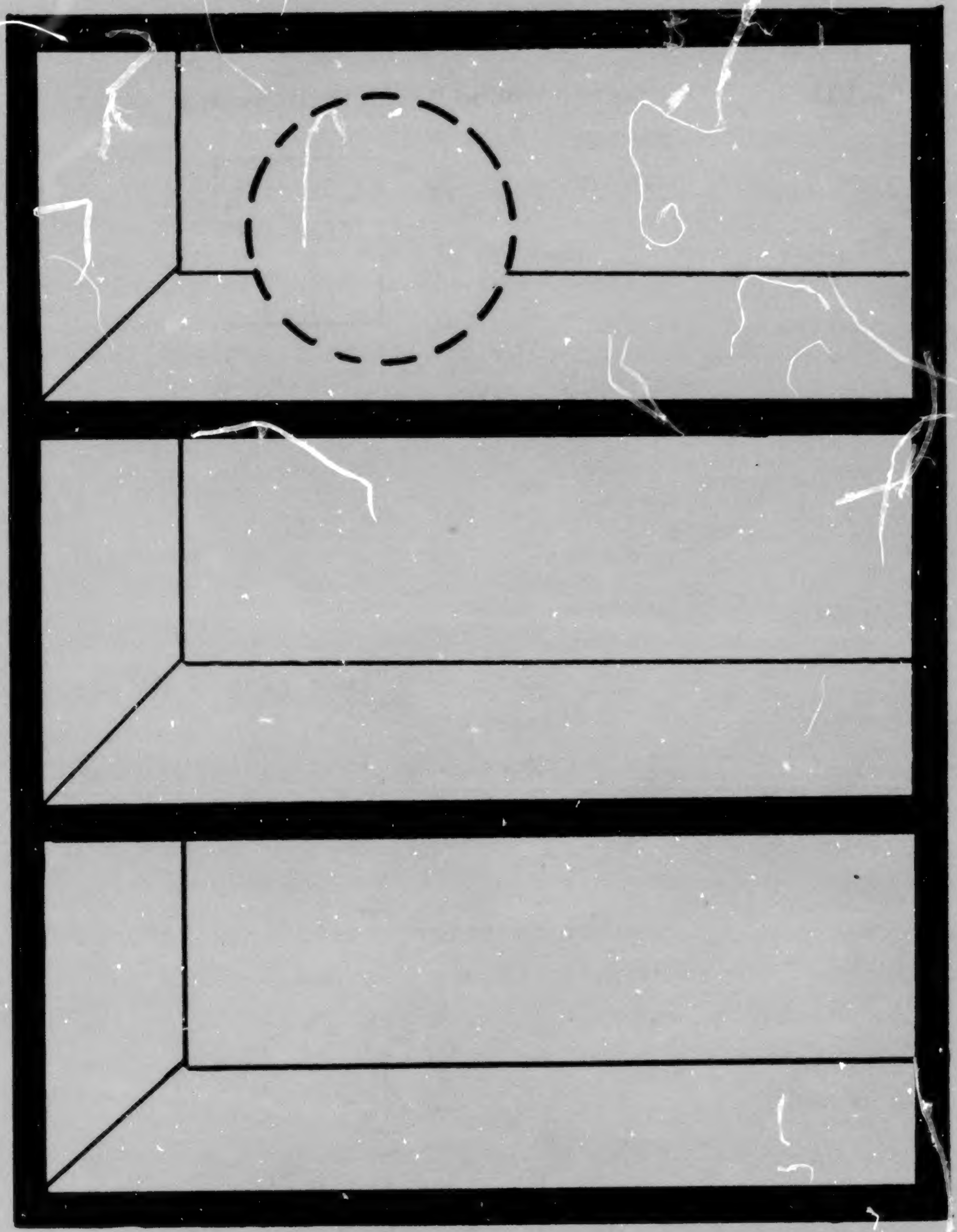
Draw 3 red apples on the tree. Draw 2 boxes on the table. Draw a ball under the table. Draw 2 red apples on the tree and one red apple on the ground.



P.O. 1.13.01.02

NAME:______________________________CLASS:________DATE:________

Draw a big blue ball on the top shelf.
Draw a yellow truck on the middle shelf.
Draw a green kite on the bottom shelf.



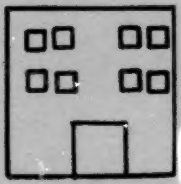
1.13.02 DEVELOP MATHEMATICAL LANGUAGE THROUGH QUESTIONS

(2 lessons/ongoing)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.13.02.01A identify numerical information within a picture;
e.g.,

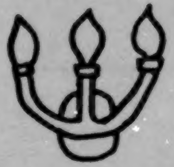


There are eight windows in this house.

*1.13.02.02A distinguish between a fact and a question;
e.g.,

Fact -- I like playing math games.
Question -- Do you like playing math games?

*1.13.02.03A develop questions based upon information obtained from a picture.
e.g.,



How many lightbulbs are in the hallway lamp?

1.13.02

VOCABULARY

TERMS

fact
question
information

GETTING STARTED

Ask questions about the physical appearance of the classroom, e.g., How many doors in the room? How many windows? How many closets? How many flags? How many pieces of chalk on the chalkboard ledge?

Draw three objects on the chalkboard, e.g., a chair, a table and a flag. Point to each object as you say, "This is a chair. This is a table. This is a flag." Draw three different objects on the chalkboard, e.g., a ball, a kite, a balloon. Point to each object as you ask, "What does this represent?"

1.13.02

1.13.02.01 **identify numerical information within a picture**

STRATEGY 1: Prepare and distribute magazine pictures of scenes to each group of four to six students. Ask each group to tell the number of objects in their picture. Say, "How many cars are in your picture? How many flowers are in your picture? ..."

STRATEGY 2: Use the worksheet 29a. Discuss the picture with the students. Say, "How many cars are on the street? How many buses? How many people are in the bus? ..."

1.13.02.02 **distinguish between a fact and a question**

STRATEGY 1: Say, "My hair is brown. I have on a red sweater. I wear eyeglasses. These are all facts about me." Allow the students to relate facts about themselves. Say, "If you wanted to know more about me, what would you have to do?" (Ask a question.) Select students to ask you various questions. e.g.,

Do you have any brothers?
Did you ever go to the zoo?
What is your favorite toy?...

Say, "When we want to find out more about something, we ask a question. When we already know something, we have a fact."

1.13.02

STRATEGY 2: Say, "There are boys and girls in the classroom. Did I tell you something or ask you something? (Tell) Are there more girls than boys? Did I tell you something or ask you something? (Ask) When we tell something, we already know the answer. When we ask a question, we want to find out the answer. We know that there are boys and girls in the classroom. That is a fact. When we ask, are there more girls than boys, that is a question. What can we do to find the answer to that question? (Count) Now we know the answer to the question. It is a fact."

Continue with other facts and questions.

1.13.02.03 **develop questions based upon information obtained from a picture**

STRATEGY 1: Prepare and display a set of three similar pictures, e.g., three houses - the first with four windows and one door, the second with four windows and two doors and the third with six windows and two doors.

Say, "I am thinking about one of these houses. Try to guess which house by asking me questions about the houses." e.g., How many windows does the house have?

Repeat this procedure with other sets of pictures.

218

1.13.02

STRATEGY 2: Display a picture of a zoo scene. Say, "I am going to ask you some questions about this picture. Which cage has two animals? How many bears are in the cage? Now you will have a chance to ask some questions about this picture."

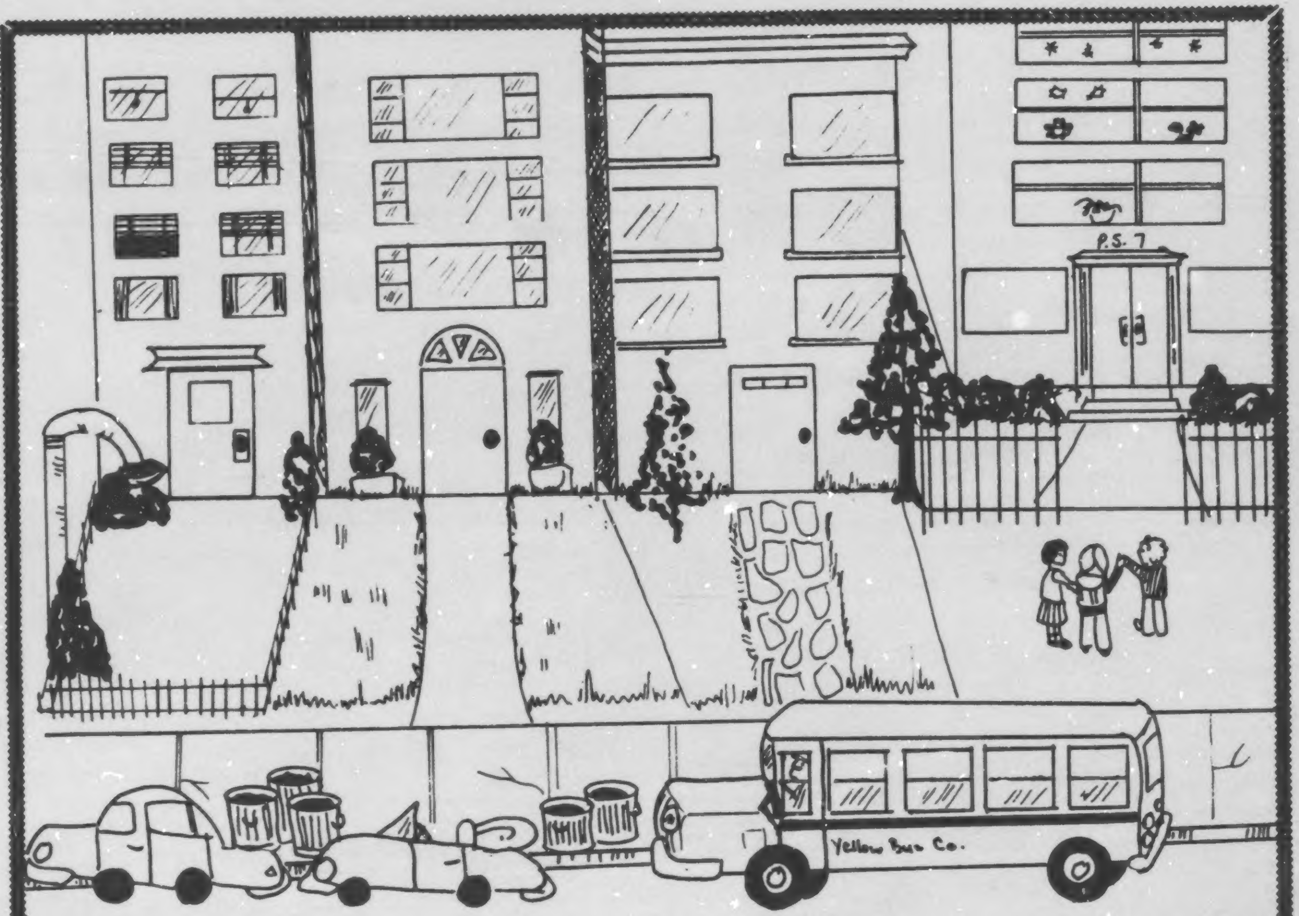
Place three magazine pictures on the chalkboard. Write five questions pertaining specifically to each picture on a slip of paper and place them in a box. Ask a student to select a paper from the box, and read the question aloud (with help, if necessary). Say, "About which picture would you ask this question?" After the correct response, ask the student to tape the question under the appropriate picture.

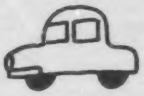
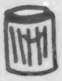
Continue this procedure with the remaining questions.

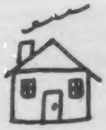
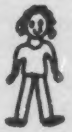
P.O. 1.13.02.01

NAME: ______________________ CLASS: __________ DATE: ________

How many cars?   How many cans?
How many houses?   How many children?


P.S. 7
Yellow Bus Co.

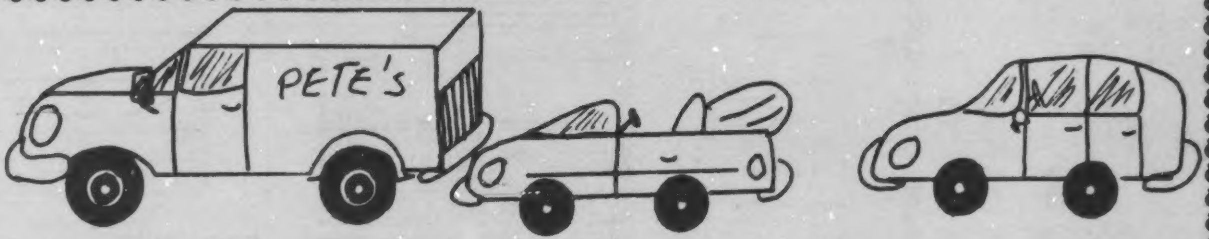
How many  ? ☐. How many  ? ☐.

How many  ? ☐. How many  ? ☐.

P.O 1.13.02.02

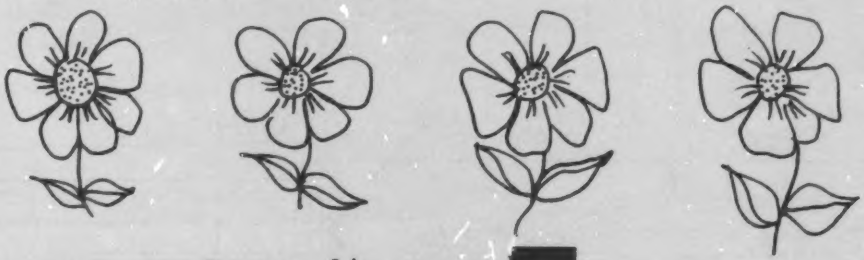
NAME: ______________________ CLASS: ________ DATE: ________

Put a period (.) after a fact.
Put a question mark (?) after a question.



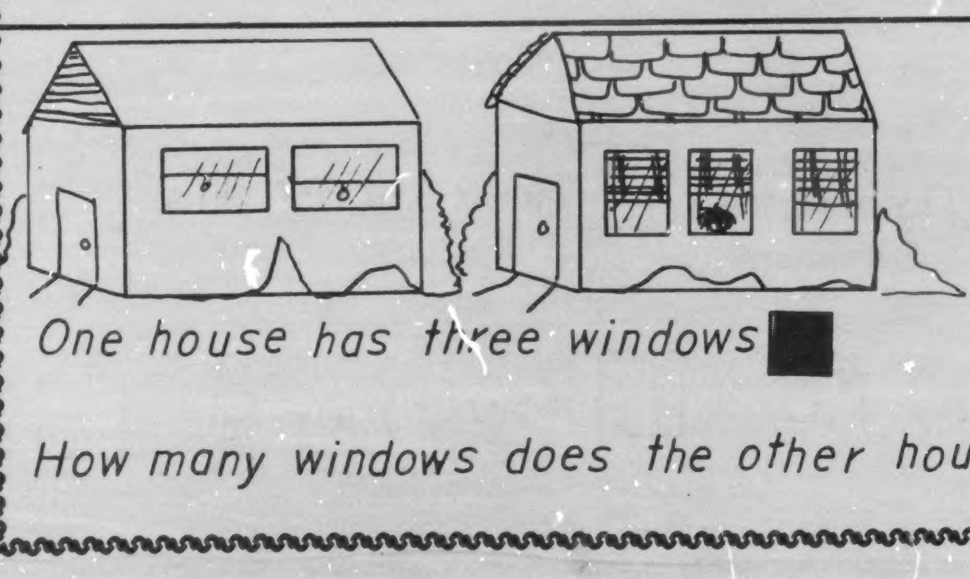
There is one truck ■

Are there two cars ■



Do you see four flowers ■

The flowers are pretty ■



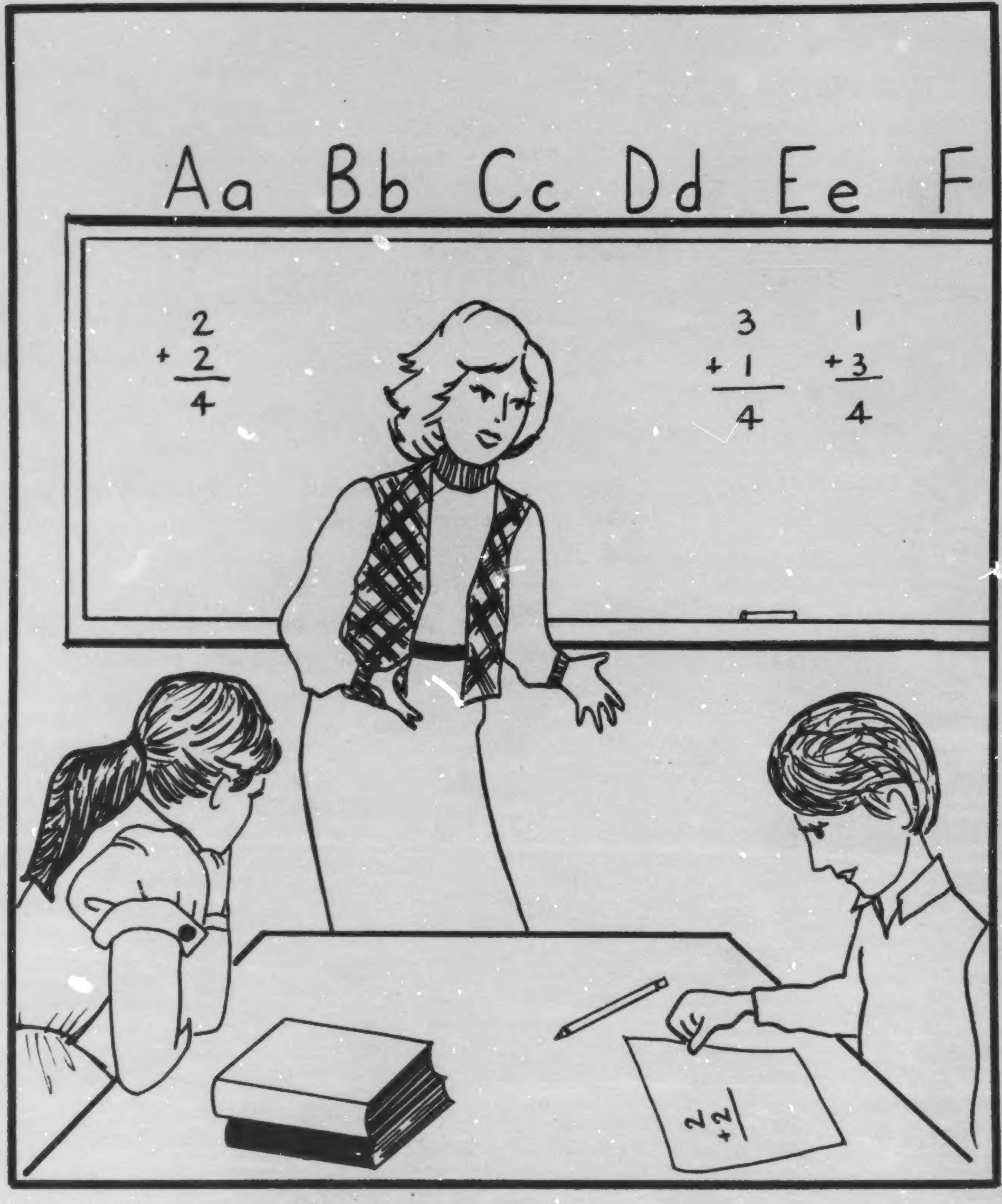
One house has three windows ■

How many windows does the other house have ■

P.O. 1.13.02.03

NAME: ______________________ CLASS: __________ DATE: __________

TEACHER: Ask students to generate questions about the picture.


Aa Bb Cc Dd Ee F
2
+ 2
4
3
+ 1
4
1
+ 3
4
2
+ 2

1.13.03 USE TABLES TO DEVELOP QUESTIONING SKILLS

(2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to. . .

*1.13.03.01A collect and record data on a table;

e.g.,

boys	||||
girls	||

*1.13.03.02A develop questions based upon information obtained from a table.

e.g,

How many boys are present today?

How many girls are present today?

How many boys and girls are present today?

1.13.03

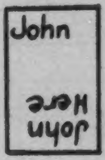
VOCABULARY

TERMS	SYMBOL
tally mark	/
count	
total	
collect	
information	
record	

GETTING STARTED

Prepare a large oaktag chart with slits, allowing a space for each student's name and name cards that will fit into the slits. Write the student's name on the top of each card and his/her name and the word "HERE" at the bottom of each card. When the students arrive each morning ask each student to turn his/her card so his/her their name and the word "HERE" can be seen.

e.g.,



Ask one student to be a monitor from each row. Ask the monitor to count the number of students in his/her row. Remind the student to count himself/herself. Say, "Get enough papers for everyone in your row and then give out the papers, one to each student. Ask the monitor to collect the papers and count them to make sure they receive one from each student.

Continue this procedure varying the objects to be distributed and collected.

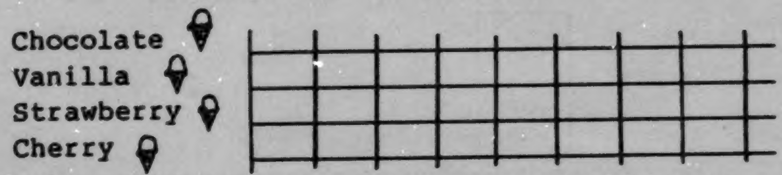
1.13.03

1.13.03.01 **collect and record data on a table**

STRATEGY 1: Prepare and distribute small sheets of paper and crayons. Ask each student to select his/her favorite color crayon and color the paper. Display a large sheet of newsprint divided into rows. Use some of the sheets the students have colored to label each row. Ask each student to make a tally mark in the row headed by his/her favorite color.

STRATEGY 2: Prepare and distribute ice cream cone shapes to the students. Talk about all the flavors of ice cream we can eat. Ask each student to color the cone with his/her favorite flavor. Draw a chart on newsprint listing all of the flavors chosen.

e.g.,



Ask each student to make a tally mark in the row where his/her favorite flavor is written and shown. Paste some of the cones to the chart for easier identification.

1.13.03.02 **develop questions based upon information obtained from a table**

STRATEGY 1: Display the favorite color chart constructed in Strategy 1 of P.O. 1.13.03.01A. Ask, "What information does this chart give us?" (Our favorite colors.) Write the title on the chart. Point to the red row and say, "What does this row tell us? (It tells us how many students liked red.) Let's count the tally marks together. How many students like red?" Write this question on an experience chart. Continue this procedure

STRATEGY 1:
cont'd

naming the colors and tallying all the rows. Write sentences about the information obtained from the chart.

e.g.,

10 students liked red
5 students liked blue.
8 students liked green.
3 students like orange.

Say, "Let's look at our color chart and story to find more information. Which color was the favorite of most of the students? (Red) How can you be sure? Come up and show us." Have the student find the red column and state that it has the most tally marks. Continue by asking which color was the choice of the fewest students. Which color was liked more than orange but less than green? Which color was the next favorite after red? After each response, have the student use the chart to demonstrate his/her answer. You may duplicate the chart, the experience story and the questions for a homework assignment or an individualized reinforcement the following day.

STRATEGY 2:

Display the ice cream cone table recorded in Strategy 2 of P.O. 1.13.03.01A. Ask, "What shall we call this chart? (Our Favorite Ice Cream Flavor) Let's see what information we can find from this chart. Who can name some of the flavors? Let's count the tally marks in each row and find out how many students like each flavor." Count the tally marks with the class. Say, "Which flavor was the favorite? Which flavor was the least favorite? How many students liked chocolate best? How can you tell? Come up and show us. How many students liked strawberry? Which flavor was liked a little more than cherry but not as much as strawberry?"

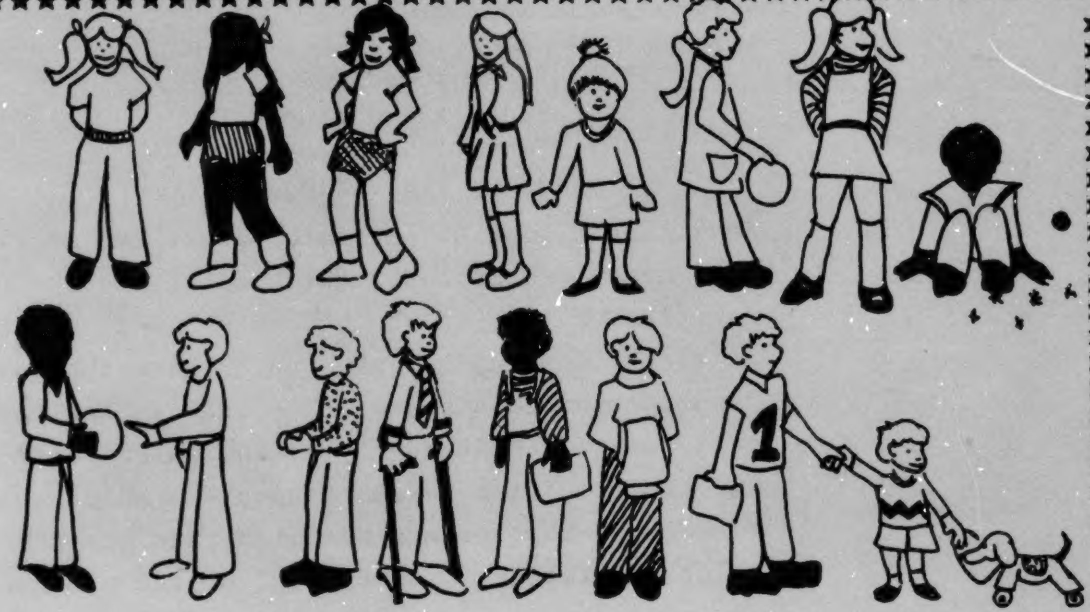
Continue this procedure.

P.O. 1.13.03.01

NAME: ______________________ CLASS: __________ DATE: ________

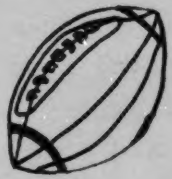
Color the number of children in your family. Use tally marks on the table. Color your favorite ball. Ask your friends to pick their favorite ball. Use tally marks on the table.

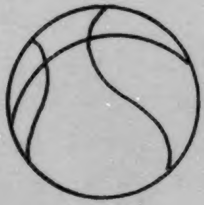
A.

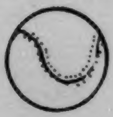


Sisters	
Brothers	

B.





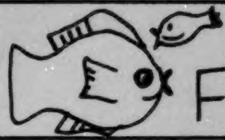


Football	
Basketball	
Baseball	

P.O. 1.13.03.02

NAME: ______________________ CLASS: ________ DATE: ______

Look at the table. Answer the questions.

Pets	
Dogs	//////
Cats	///
 Fish	////
Birds	/
Other	/////
None	//

Look at the table.

How many people own:

dogs? _____ birds? _____

cats? _____ other? _____

fish? _____ none? _____

Which two groups have the same number of pets?

1.02.01 IDENTIFY THE PLUS (+) SYMBOL AND THE EQUAL (=) SYMBOL

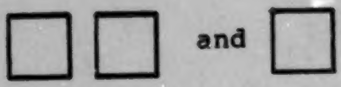
(5-6 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

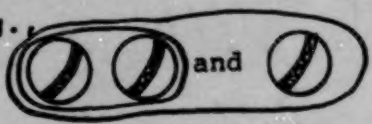
*1.02.01.01A recognize that addition is the union of groups;

e.g.,



*1.02.01.02A recognize that when two groups of objects are added together the resulting group is greater than either of the two original groups;

e.g.,



*1.02.01.03A identify the plus (+) symbol;

e.g.,

+

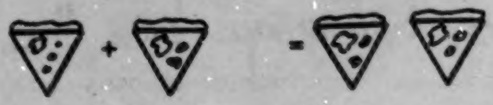
*1.02.01.04A identify the equal (=) symbol;

e.g.,

=

*1.02.01.05A identify both the plus (+) and the equal (=) symbols, using a horizontal format.

e.g.,



1.02.01

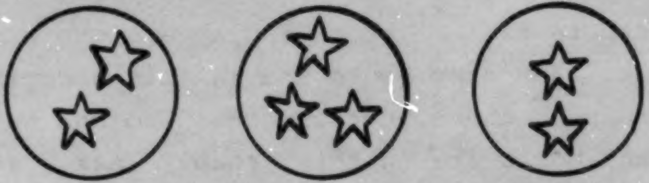
VOCABULARY

TERMS	SYMBOLS
equal	=
plus	+
add	
in all	
all together	
join	
set	

GETTING STARTED

Prepare and display ten flannelboard cutouts, a flannelboard and two "X's". Arrange the cutouts into three groups. Two of the groups should contain the same number of objects and the third group should contain a different number. Say, "Who can go to the flannelboard and point to the two groups which have the same number of objects? Mark them with an X."

e.g.,



Continue this procedure using the cutouts to make other groups.

Prepare and distribute drawing paper which has been folded into eight boxes, and crayons. Draw a similar chart on the chalkboard. Play the game "How Many Sounds Do You Hear?" Say, "We will make a tally mark in each box for each sound you hear. Listen carefully and count the sounds. Put your finger on the first box (demonstrate at the chalkboard) and get ready to listen."

Clap your hands two times, pause, then knock on the table one time. Say, "How many sounds did you hear? (3) We will make three tally marks in the first box."

Repeat the activity varying the sounds and recording the number of sounds in different boxes.

1.02.01

1.02.01.01 **recognize that addition is the union of groups**

STRATEGY 1: Prepare and distribute crayons in the following manner. Place two in the right-hand corner of each student's desk. Say, "How many crayons do you have?" Distribute one more crayon by placing it in the left-hand corner of each desk. Say, "Let's move the crayon that I just gave you to join the other two that you already have. Has the number of crayons in the corner of your desk changed? (Yes.) How many do you have now? (Three.) Two plus one are three."

Repeat this procedure by adding one additional crayon to the new group of crayons until all of the students have five crayons.

STRATEGY 2: Prepare five books. Display a group of two books. Ask, "How many books are in this group?" Display a group of three books. Ask, "Who can tell us how many books are in this group?" Ask a student to arrange the books in one pile on the table. Say, "We put the two groups together. How many books are in this big pile? Who can count them? Each time we join two sets or groups of objects we are adding them together. We add groups by putting them together."

Repeat this procedure using other objects, e.g., blocks, erasers, pencils, scissors, paint containers.

1.02.01.02 **recognize that when two groups of objects are added together, the resulting group is greater than either of the two original groups**

STRATEGY 1: Play "Simon Says Stand". Ask three students to stand together at one end of the chalkboard. Ask

STRATEGY 1: cont'd

two other students to stand at the other end of the chalkboard. Say, "We have two groups of students. Who can count the members of this group? Who can count the members of the other group?" Ask the two groups to move together. Say, "We added the two groups to each other. Who can tell us how many students are in the new group? Is the new group greater than each of the original groups? Why?" Continue playing this game, varying the number of students in the groups and giving many students the opportunity to participate.

STRATEGY 2:

Prepare paper plates and blocks. Place three blocks on one paper plate and two blocks on another plate. Say, "What would happen if we put the groups together? (We would have one big group.) Which group would you like to have, a group of two blocks, a group of three blocks or a group of five blocks?"

Continue this procedure using other groups of blocks, stressing that the resulting group will always be larger than the original groups.

1.02.01.03 **identify the plus (+) symbol**

STRATEGY 1:

Prepare and distribute two colors of interlocking cubes and a placemat to each student. Display a linked group of three red and two blue cubes at the chalkboard. Say, "How many red cubes do you see? On your placemat show the same number of red cubes. How many blue cubes do you see? On your placemat show the same number of blue cubes. Who can tell us a number story?"

Write the number story on the chalkboard. e.g., 3 and 2 or 2 and 3.

STRATEGY 1: cont'd

Say, "There is another word for and when you join two groups. The word is plus. Let's say it together. Now read this sentence (Point to 3 and 2) using the word plus. Present a symbol card (+). This is the symbol for plus. Ask the students to reread the sentence while the teacher places the symbol card over the word 'and'.

Repeat this procedure using different number sentences through five using the interlocking cubes.

STRATEGY 2:

Prepare and distribute a plus symbol (+) card and five counters to each student. Say, "Put three counters on one side of your desk. Now put two counters on the other side of your desk. You have two groups of counters. Push them together into one group. How many counters are there now? (5) We joined the groups. We can show this as a number sentence using our symbol card. Let's start again. Place three counters on one side of your desk. Place two counters on the other side of your desk. Pick up the symbol card. What does it say? It says plus. Plus means put together. Place the card between the groups of counters. Who can read the number sentence? (3 plus 2.) This sentence tells us to join the group of three and the group of two. We did not have to push them together this time. The plus symbol (+) joined them together." Continue this procedure asking the students to use groups of counters and show they are to be joined by using the plus symbol (+) card. Ask the students to read their number sentences aloud.

1.02.01

1.02.01.04 identify the equal (=) symbol

STRATEGY 1: Prepare and display a flannelboard, flannel cutouts of apples, hats, trees, stars, rabbits, two 15" lengths of yarn in different colors and a flannel equal (=) sign. Place two apples on the left side of the flannelboard. Ask a student to put a piece of yarn around the apples to show a group. Say, "We have a group of two apples." Place two more apples on the right side of the flannelboard and ask a student to use the yarn to put these apples in a group. Say, "How many apples are in this group? Yes, this group also has two apples. Are the groups the same? Why? (Each group has two apples.) When groups are the same, we call them equal. Two apples are the same as two apples. Two apples equal two apples." Display the equal (=) symbol. Say, "This symbol means equal. When I put it between the two groups of apples, we read the number sentence as two apples equals two apples."

Continue this procedure using other flannelboard cutouts and placing the equal symbol between the groups each time. Ask the students to read each number sentence displayed.

STRATEGY 2: Prepare and distribute equal sign cards, a box of counters and two strands of yarn, each of a different color to each student. Say, "Today we are going to make groups which have the same number of counters. Groups that have the same number are equal. Find the equal (=) symbol card on your desk. Place a group of counters on your desk. Place a string around the group. Make another group having the same number of counters.

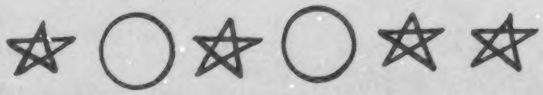
STRATEGY 2: cont'd

Place the other string around this group. Are the groups the same? How can you tell? What should we place between the two groups that will tell us they are the same? (The equal sign.) Yes, the groups are equal.

Continue this procedure giving students many opportunities to form equal groups and use the symbol card.

1.02.01.05 **identify both the plus (+) and the equal (=) symbols, using a horizontal format**

STRATEGY 1: Prepare a flannelboard, flannel cutouts, large flannel circles and flannel plus and equal symbols. Display a mathematical picture sentence on the flannelboard, using circles where the plus (+) and equal (=) symbols belong.
e.g.,

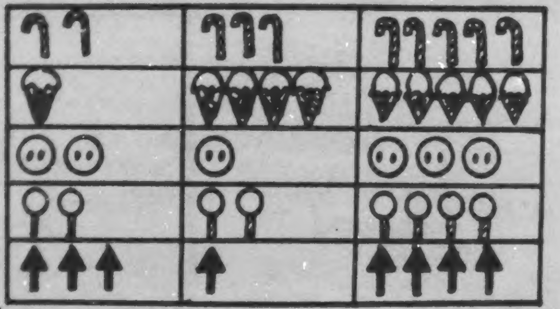


Place both symbols on a table in front of the flannelboard. Say, "Who can place these symbols inside the correct circle to make this picture sentence true?"

Repeat this procedure changing the number of cutouts in the picture sentence.

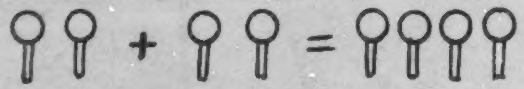
STRATEGY 2: Prepare the following rexograph sheet and (+) and (=) symbol cards.

e.g.,



Cut the sheet apart and place each group of pictures in a separate envelope. Distribute the symbol cards and an envelope to each student. Ask the students to identify the symbols. Demonstrate making a mathematical picture sentence on the flannelboard using the symbols.

e.g.,



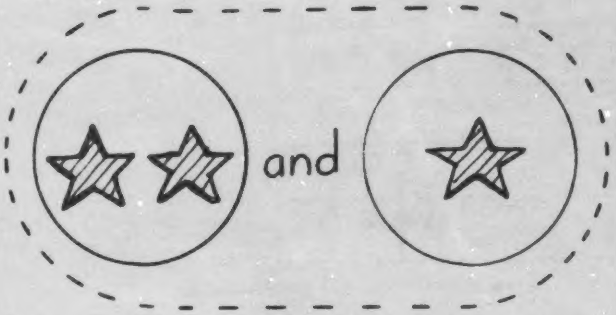
Say, "Look in your envelope. You will find some picture cards. Select 3 cards with the same pictures. Use your symbol cards as I just did to make a picture sentence of your own. Remember to put it in the proper order. Ask the students to read their mathematical sentences aloud.

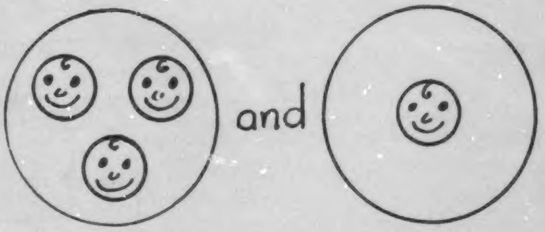
Continue this procedure with all of the picture cards in the envelopes.

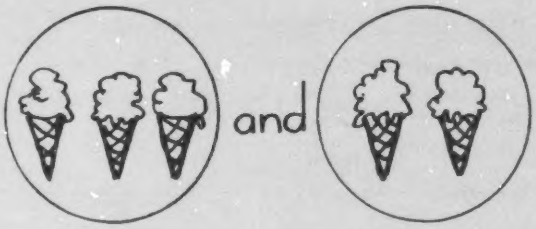
P.O.1.02.01.01-.02

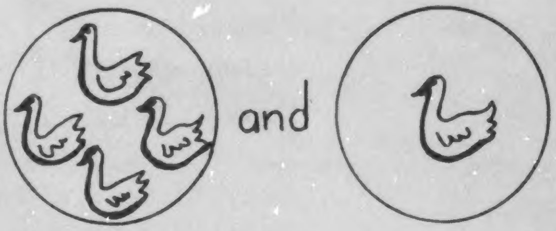
NAME: ______________________________ **CLASS:** ________ **DATE:** ________

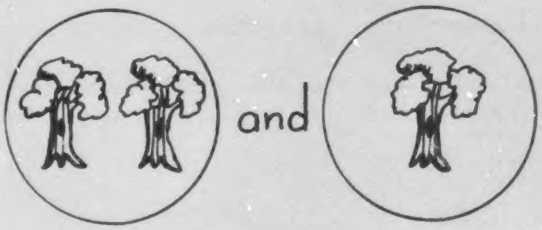
Circle both groups making one larger group.

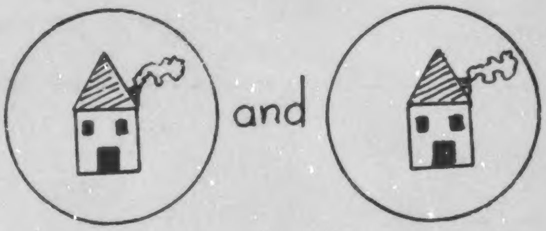


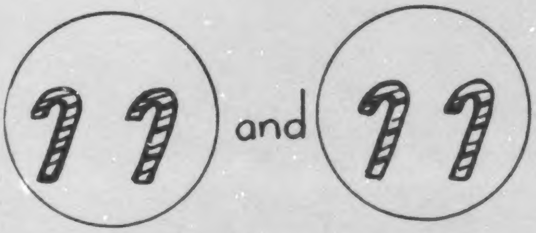


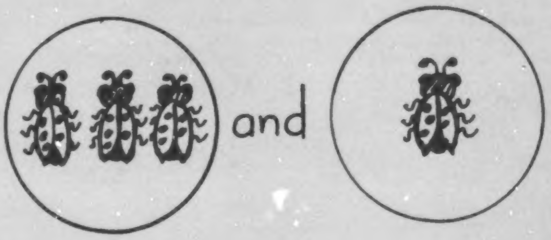












P.O. 1.02.01.03

NAME:____________________ CLASS:________ DATE:________

Circle the plus (+) symbols.

+ ○ 3 □	5 + ★ 4
○ 3 + 4	★ 4 + 6
5 7 + ★	8 ☺ + 1
1 3 4 +	+ ★ △ ☺
+ □ △ +	1 △ + ★
+ △ + +	+ 1 + 1

P.O. 1.02.01.04

NAME: ________________________ CLASS: __________ DATE: ________

Circle the equal (=) symbols.

= 1 ★ ☺

★ ☺ 1 =

= + ★ ☺

+ = ☺ 3

= + = =

= 1 4 2

= 4 3 =

= + = +

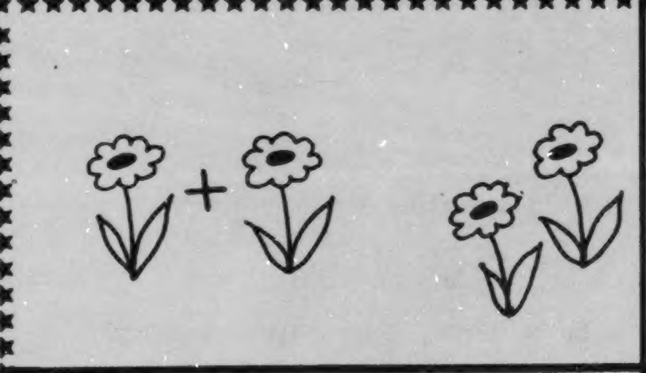
= 5 ★ =

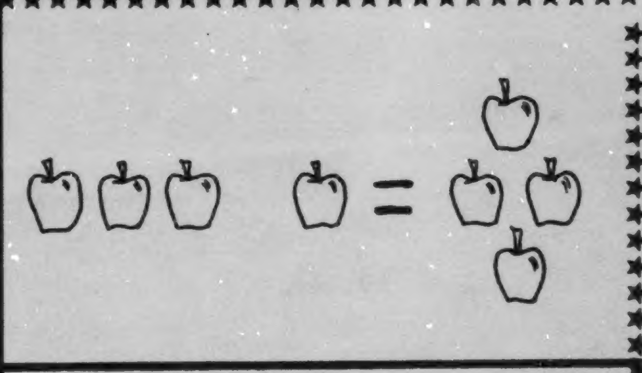
+ = + +

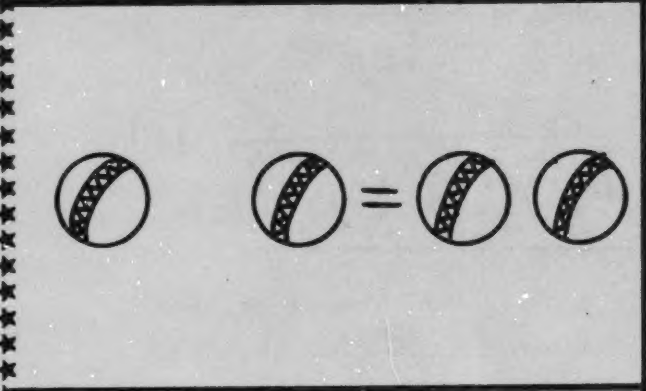
P.O. 1.02.01.05

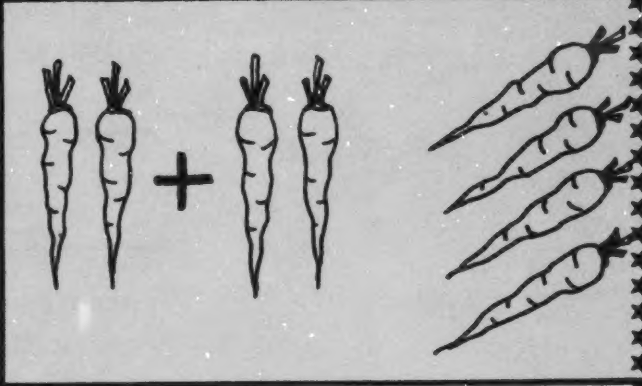
NAME: ______________________ **CLASS:** __________ **DATE:** ________

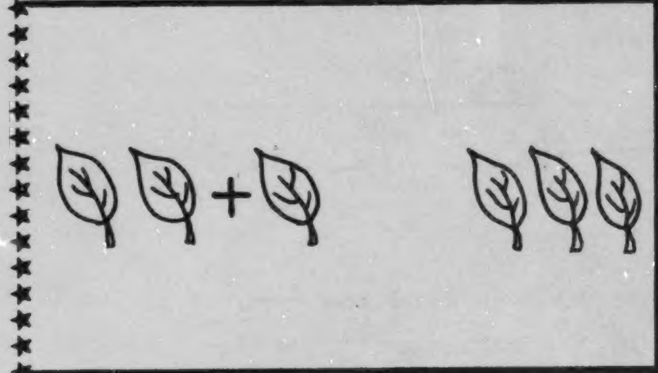
Write the missing symbol (+ or =) in each sentence.

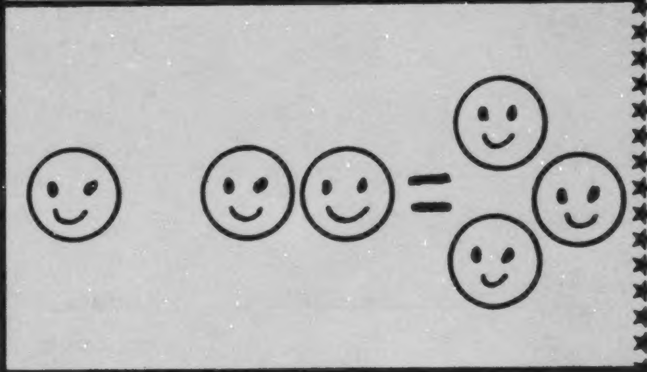


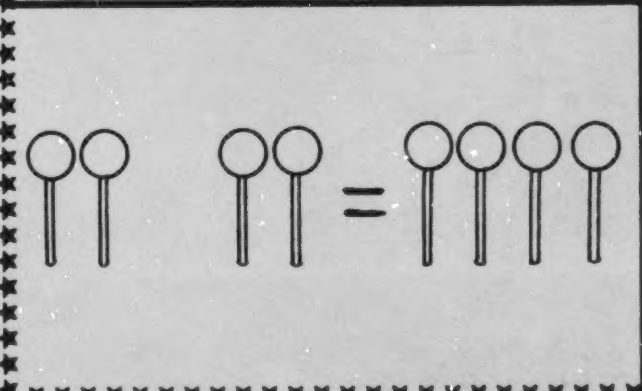


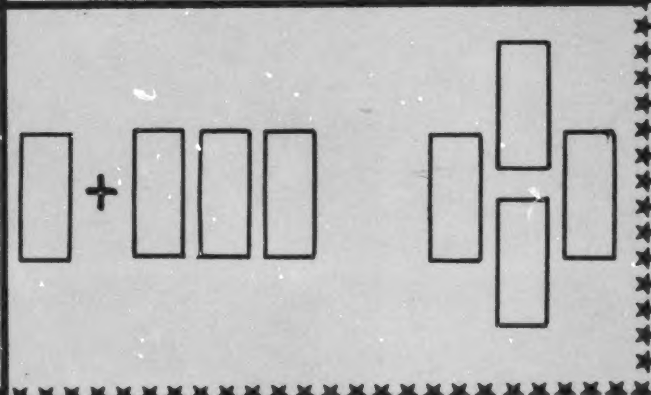












1.01.09 NUMERALS SIX (6) THROUGH NINE (9)

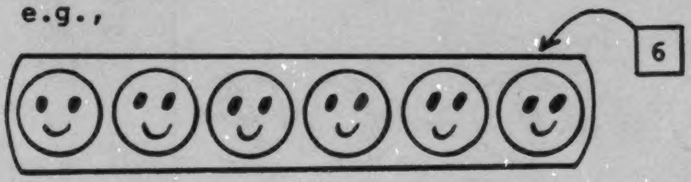
(3 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

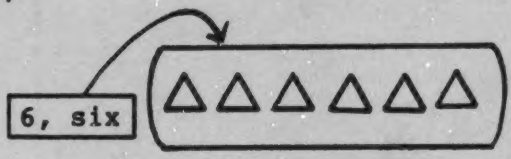
1.01.09.01A identify and associate the numerals 6 through 9 with a group (set, lot, bunch, heap, pile) having six through nine objects;

e.g.,



1.01.09.02B associate the number words six through nine with the numerals 6 through 9 and with groups having six through nine objects;

e.g.,



1.01.09.03A locate where you can find the numerals 6 through 9 in the home, school and/or neighborhood.

e.g.,

clocks
calendars

VOCABULARY

TERMS	SYMBOLS
six	6
seven	7
eight	8
nine	9

GETTING STARTED

Prepare and distribute 15 gummed circles and a sheet of unlined paper to each student. Write the numeral 1 on the chalkboard. Ask a student to identify it. Ask the students to write the numeral 1 on the top left hand side of their paper, and paste one circle next to it. Say, "How many circles did you place next to the numeral 1?"

Continue this procedure with the numerals 2 through 5.

1	O
2	OO
3	OOO
4	OOOO
5	OOOOO

Prepare and display groups of similar objects and the numerals 1 through 5. Ask a student to choose the correct numeral for the number of items displayed.

Continue this procedure varying the number of objects.

1.01.09

1.01.09.01 **identify and associate the numerals 6 through 9 with a group (set, lot, bunch, heap, pile) having six through nine objects**

STRATEGY 1: Place six blocks on a table. Say, "How many blocks do you see?" Write the numeral 6 on the chalkboard. Ask a student to come to the table and make another stack of six blocks. Ask a third student to draw six objects on the chalkboard. Continue building blocks, drawing groups making stacks and writing the amount through 9.

STRATEGY 2: Prepare and distribute sheets of unlined paper. Ask the students to fold the papers into fourths as you demonstrate. Draw six circles in the first box. Ask the students to draw six circles and count them. Write the numeral 6 under the drawing. Say, "Who can tell us the number this numeral names?" Continue this procedure for the numerals 7, 8 and 9. After the numerals have been written and identified, point to one at random and ask, "Who can tell us the number name for this numeral?" Continue this procedure using other groups of six through nine objects.

1.01.09.02 **associate the number words six through nine with the numerals 6 through 9 and with groups having six through nine objects**

STRATEGY 1: On the chalkboard draw three columns labeled with the headings Number, Numeral and Word. Distribute a placemat, nine cubes, twelve blank cards and four crayons (blue, red, green and black) to each student. Say, "Listen to the number I say and repeat it after me. Six. Count out that number of

STRATEGY 1:
cont'd

cubes and put them on your placemat. Take one of your cards and with your red crayon draw six squares on it." Draw six squares under the number column at the chalkboard. Say, "What numeral can we write to show we have six cubes? (6) Write the numeral 6 with your red crayon on another card." Write the numeral 6 under the correct column at the chalkboard. Complete the Word column by writing the word six in it.

e.g.,

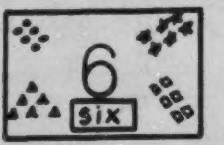
NUMBER	NUMERAL	WORD
□□□□□□	6	six

Point to the word and say, "This word tells us how many cubes we counted." Ask a student to read the word. Say, "With your red crayon write the word 'six' on another card." Repeat this procedure for 7, 8 and 9 using a different color crayon for each number. Students will now have their own set of color coded number cards.

STRATEGY 2:

Prepare four large cards numbered 6, 7, 8 and 9 and four cards with the number words six through nine. Prepare and display pictures containing groups having six through nine objects. Tape the numeral 6 card to the chalkboard. Say, "Look at these pictures. Who can find a picture that shows a group of six objects?" Tape the pictures on the numeral six card. Hold up the card with the word "six" and say, "This word tells us the number of objects we counted. The word is six." Ask the students to repeat the word. Tape the word at the bottom of the six card. The completed card will have groups of six, the numeral 6 and the number word six.

e.g.,



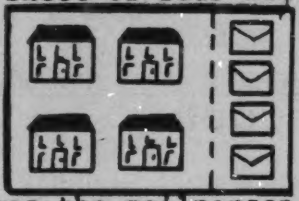
STRATEGY 2: cont'd

Repeat this procedure to make 7, 8 and 9 cards. Completed cards can be displayed in the classroom.

1.01.09.03 **locate where you can find the numerals 6 through 9 in the home, school and/or neighborhood**

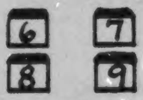
STRATEGY 1: Prepare and distribute scissors, paste, a rexographed sheet of four houses and four envelopes.

e.g.,



Say, "How does the mailperson know where to deliver a letter? We will give each of our houses an address. One of the houses will be number 6, another number 7, another number 8 and the last house is number 9. Write these addresses on your houses." Demonstrate at the chalkboard.

e.g.,



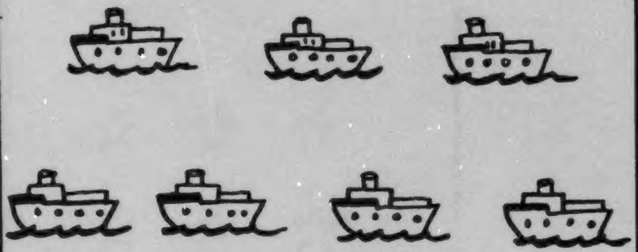
Say, "You are going to be a mailperson today. Number the envelopes 6, 7, 8 and 9. Cut the envelopes out and paste them below the house with the same numeral."

STRATEGY 2: Prepare and distribute a magazine, scissors, paste and a paper folded into fourths to each student. Say, "Write the numeral 6 in the top box on the left side of the paper. Write the numeral 7 in the top box on the right side of your paper. Write the numeral 8 in the bottom box on the left side of your paper, and the numeral 9 in the bottom box on the right side of your paper." Demonstrate. Say, "Find magazine pictures which show the use of the numeral 6, cut them out and paste them in the numeral 6 box on your paper. Do the same for the numerals 7, 8 and 9." e.g., Bus 8; Exit 6.

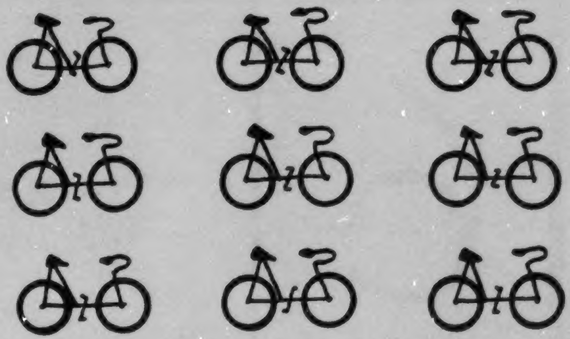
P.O. 1.01.09.01

NAME: ______________________ CLASS: ________ DATE: ________

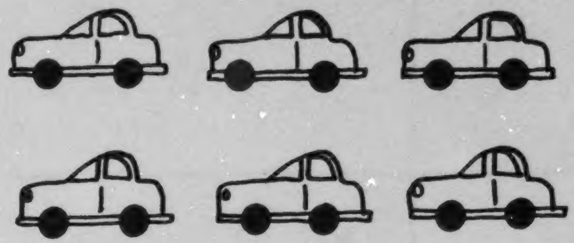
Draw a ring around the number which shows how many there are in each group.



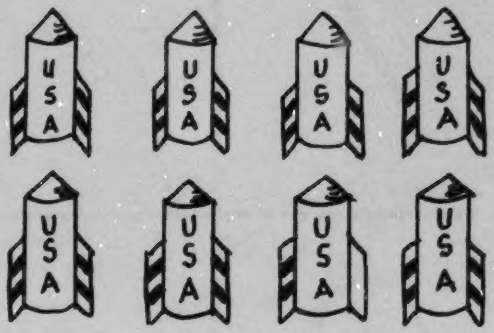
6 [✓ 7] 8 9



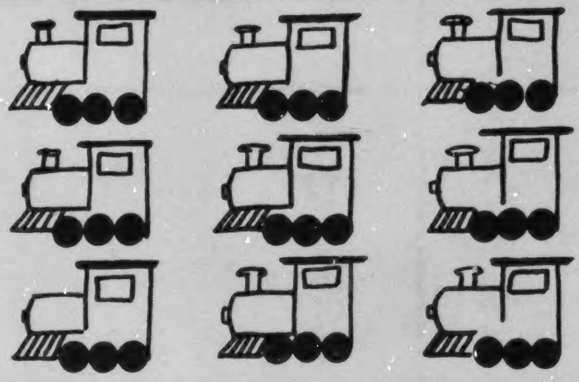
6 7 8 9



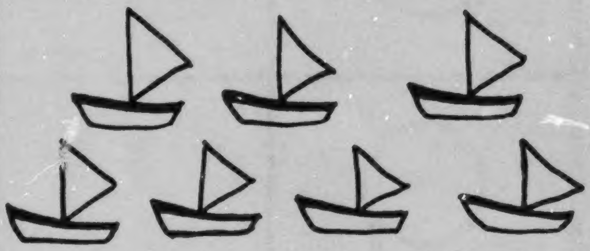
6 7 8 9



6 7 8 9



6 7 8 9



6 7 8 9

P.O. 1.01.09.02

NAME: ______________________ CLASS: ________ DATE: ________

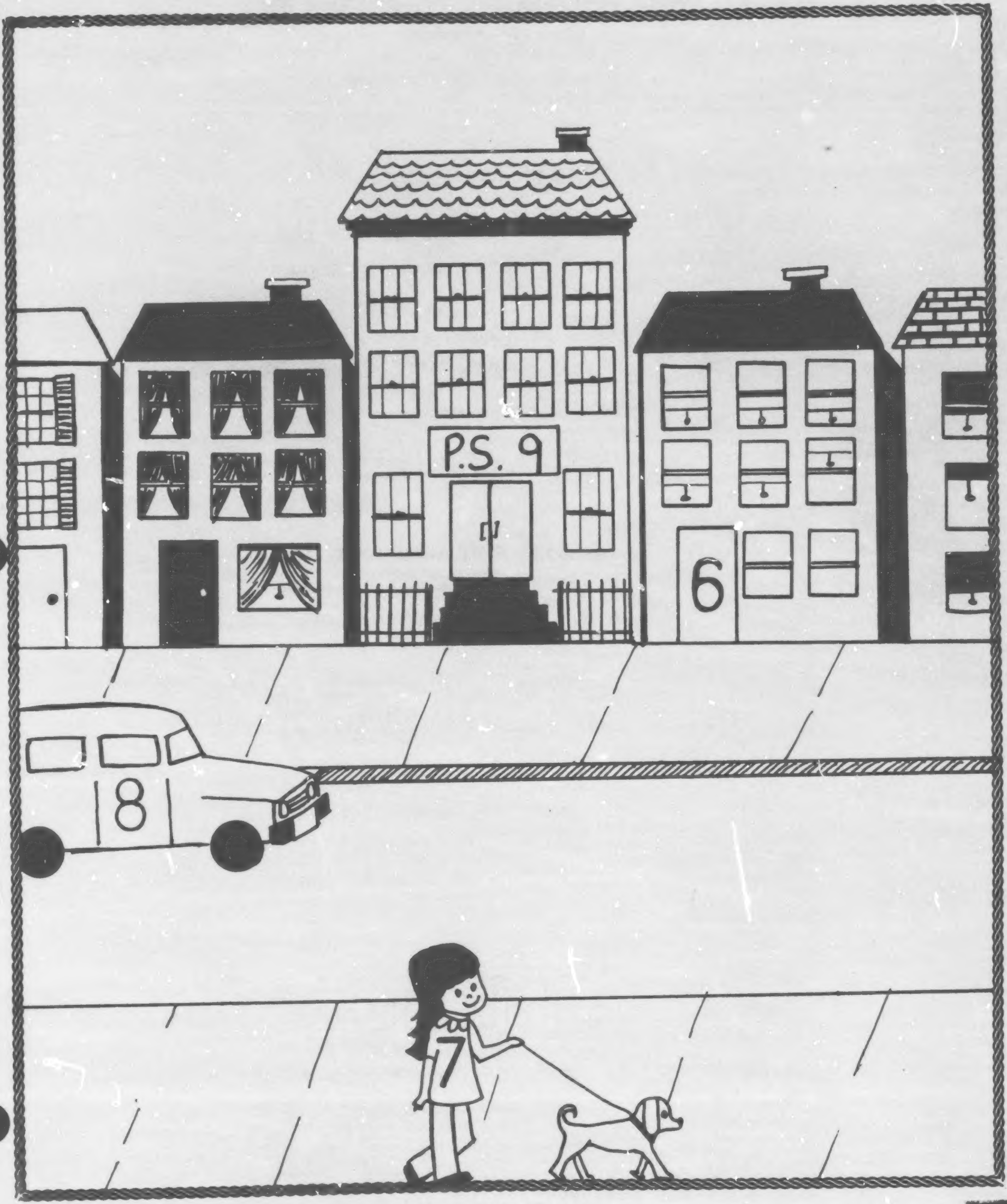
Write the number words.

6	SIX	☆ ☆ ☆ ☆ ☆ ☆
7		☆ ☆ ☆ ☆ ☆ ☆ ☆
8		☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆
9		☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

P.O. 1.01.09.03

NAME: ______________________ CLASS: __________ DATE: ________

Color the spaces with the numbers 6, 7, 8 and 9.



1.01.10 ORDER NUMERALS ONE (1) THROUGH NINE (9)

(1-2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

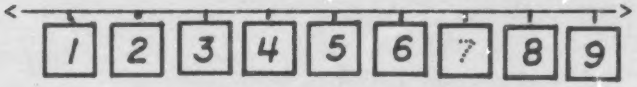
1.01.10.01A identify and order the numerals and number words from 1 through 9; e.g.,

1, 2, 3, 4, 5, 6,
one, two, three, four, five, six,

7, 8, 9
seven, eight, nine

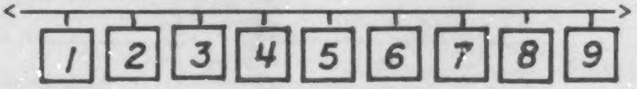
1.01.10.02A identify the numeral that comes one after a given numeral (1 through 9); e.g., "Which numeral comes one after 6?"

seven

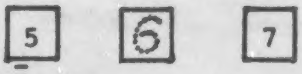


1.01.10.03A identify the numeral that comes one before a given numeral (1 through 9); e.g., "Which numeral comes one before 8?"

seven



1.01.10.04A identify the counting number that comes between two given counting numbers. e.g.,



VOCABULARY

TERMS

before
after
between

GETTING STARTED

Prepare and distribute chips and a Bingo card with the numerals 1 through 9 listed randomly. Call out the numbers 1 through 9 in random order. Ask the students to place a chip on each numeral called. The first student to complete a line on his/her card calls, "Bingo."

Prepare and distribute nine small pieces of paper to each student. Ask the students to write the numerals 1 through 9, one numeral on each sheet of paper. Say, "I will hold up some of my fingers. Count them to yourselves, then hold up the numeral card that shows how many fingers I am showing. Hold your card so that only I can see it."

To reverse the procedure, say, "Now I will show you a numeral card and you hold up the same number of fingers as the numeral on the card." Show the cards in random order.

1.01.10

1.01.10.01 **identify and order the numerals and number words from 1 through 9**

STRATEGY 1: Prepare and display numerals 1 through 9 and number word cards one through nine. Say, "I will start this game by naming the first counting number. One. Mary, can you find the numeral one and the word one? Bring them to me." Display the numeral and the word card. Say, "Mary will name the next counting number and ask someone else to find the correct cards."

Continue this procedure.

STRATEGY 2: Prepare two sets of cards, one set with numerals and one set with number words. On the chalkboard draw two 2 by 10 grids. Place the cards face down under each grid drawn on the chalkboard.

e.g.,

Numeral	Number Word

Set One

Numeral	Number Word

Set Two

Divide the class into two teams. The first person on each team picks up the first card from his/her team's set of cards and tapes it in the proper column and row. e.g., The word five would be placed in the second column, fifth row. The student then goes to the end of the line. If an error has been made, the next student on the team must correct it before choosing a new card. The first team to place all of their cards properly wins.

1.01.10

1.01.10.02 **identify the numeral that comes one after a given numeral (1 through 9)**

STRATEGY 1: Draw a number line, numbered one through nine, on the chalkboard. Ask the students to identify each numeral in order. Distribute a set of numeral cards (1 through 9) to each student. Say, "I will say the name of one of the numerals on the number line. I would like you to hold up the numeral card that comes one after the numeral I say. Point to the seven on the number line and say, "If I point to seven, what number comes one after it? Eight is the number that comes one after seven."

Continue this procedure.

STRATEGY 2: Prepare and distribute papers with two rows of nine squares and four crayons.

e.g.,

1	2	3	4	5	6	7	8	9

Draw a larger version of the grid on the chalkboard. Say, "I am going to ask you to draw different shapes in the boxes under the numerals. Listen carefully to the first direction. Draw a red circle under the numeral which comes one after two. Who can tell and show us where to draw a red circle?" Ask a student to demonstrate by drawing a red circle under the numeral three. Ask the students to do the same thing on their papers.

Continue this procedure.

1.01.10

1.01.10.03 **identify the numeral that comes one before a given numeral (1 through 9)**

STRATEGY 1: Prepare numeral cards (1 through 9). Ask nine students to come to the front of the room. Give each student a numeral card to hold. Ask the class students to identify each student by his/her numeral card. Arrange the students in counting order. Say, "Who can tell us what number comes just before two?" Ask a student to name the number. If the answer is correct the student changes places with the person holding the numeral card he/she identified.

Repeat the procedure.

STRATEGY 2: Prepare and distribute number lines. Hang a string across the chalkboard. Prepare and attach numeral cards (1 through 9) with spring clothespins to the string. Hang the cards so that the blank side is facing the class. Turn over one card so that the numeral faces the class. Say, "What number is this? What number do you think comes one before this number? Check your answer by looking at your number line." Ask a student to turn over the correct card.

Repeat this procedure.

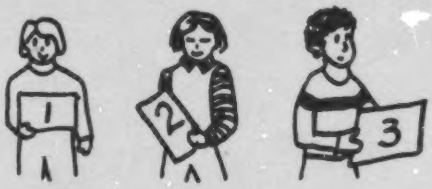
1.01.10

1.01.10.04 identify the counting number that comes between two given counting numbers

STRATEGY 1: Prepare and distribute a numeral card (1 through 9) to each student. Ask all the students with the numeral cards 1 and 3 to stand in front of the classroom in pairs. Say, "Which number comes between 1 and 3? (2) Will all the students with the numeral card 2 please stand between the students holding 1 and 3."

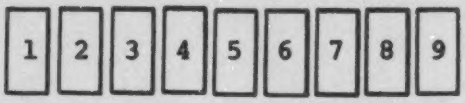
Repeat this procedure, using the numerals 2 and 4, 3 and 5, 4 and 6, 5 and 7, 6 and 8, and 7 and 9.

e.g.,



STRATEGY 2: Draw nine large rectangles on the chalkboard. Label them 1 through 9.

e.g.,



Prepare an oaktag picture of an automobile. Say, "This is a make-believe parking lot. Each parking spot has a number. Which spot is number 1... 9?" After each spot is identified, say, "Jeff was told by the parking attendant to park between spots 1 and 3. Where should Jeff park? Place the picture of Jeff's car in the correct spot." Repeat this procedure for the remaining parking spots.

P.O. 1.01.10.01

NAME: ______________________________ CLASS: __________ DATE: ________

Draw Indian stick figures for each number sentence.

One little Indian ________________

Two little Indians ________________

Three little Indians ________________

Four little Indians ________________

Five little Indians ________________

Six little Indians ________________

Seven little Indians ________________

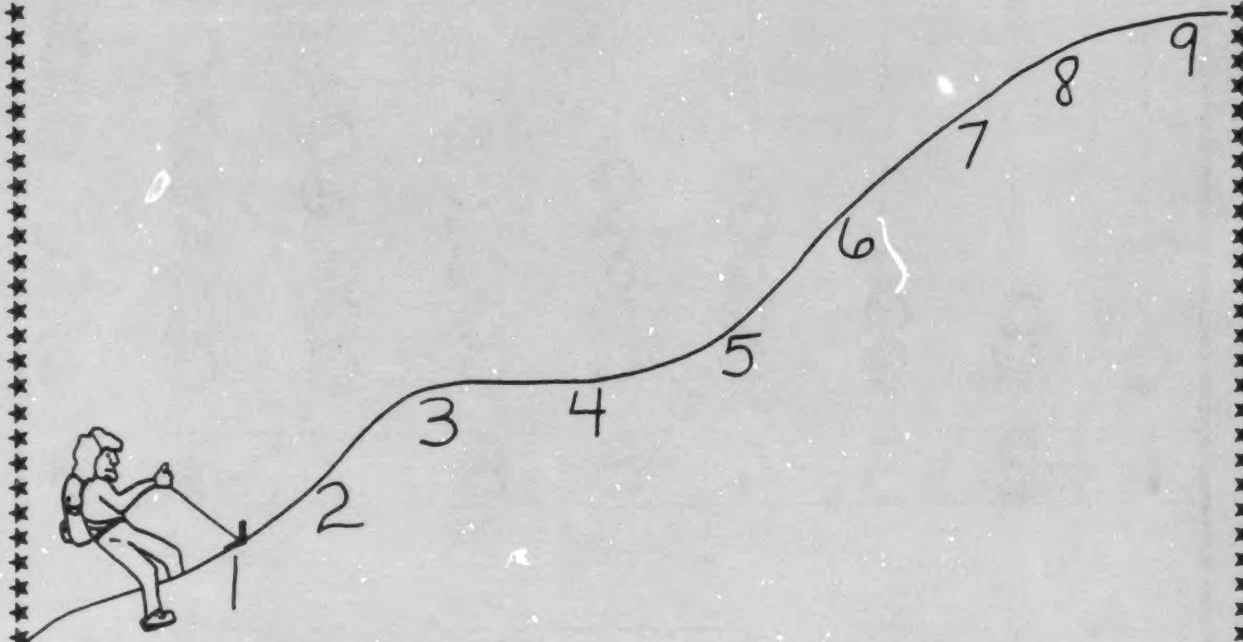
Eight little Indians ________________

Nine little Indian boys and girls. ________________

P.O. 1.01.10.02

NAME: ______________________ CLASS: ________ DATE: _______

Fill in the number which comes after the given number.



3 _____ 2 _____ 5 _____

5 _____ 1 _____ 8 _____

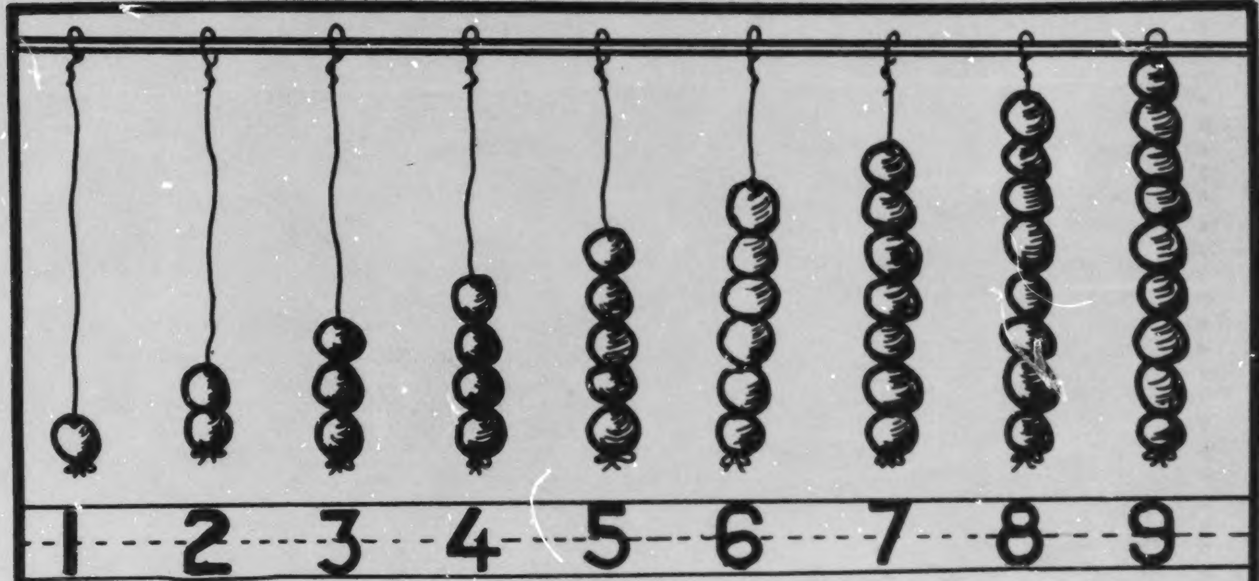
8 _____ 4 _____ 6 _____

7 _____ 6 _____ 1 _____

P.O. 1.01.10.03

NAME: ______________________ CLASS: ________ DATE: ________

Write the number which comes before the given number.



____ 3 ____ 5 ____ 8

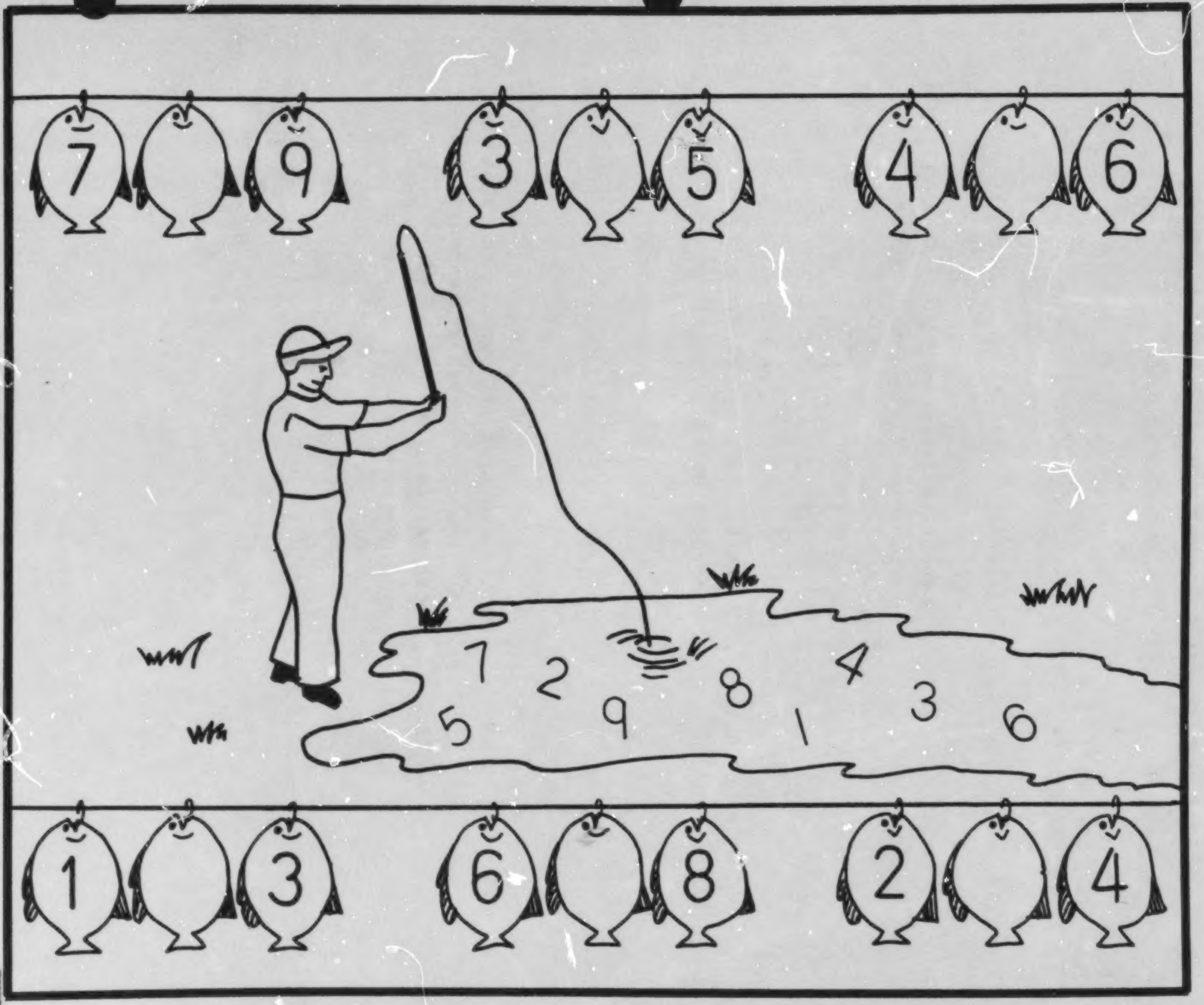
____ 2 ____ 6 ____ 9

____ 4 ____ 7 ____ 3

P.O. 1.01.10.04

NAME: ____________________ CLASS: ____________ DATE: ____________

Fill in the missing numbers.


7
9
3
5
4
6
7
2
8
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9
1
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2
4

1.02.02 NUMBER SENTENCES WITH THE PLUS (+) SYMBOL AND THE EQUAL (=) SYMBOL

(1 lesson)

PERFORMANCE OBJECTIVES

	The student will be able to...
*1.02.02.01A	identify a frame as a place for writing a missing numeral in a number sentence; e.g., $3 + 2 = \square$
*1.02.02.02A	identify the plus (+) symbol in number sentences using vertical format; e.g., $\begin{array}{r} 3 \\ + \underline{2} \end{array}$
*1.02.02.03A	write the plus (+) symbol and the equal (=) symbol in number sentences, using both vertical and horizontal formats. e.g., $\begin{array}{r} 2 \\ + \underline{2} \end{array}$ $\quad 2 + 2 =$

1.02.02

VOCABULARY

TERMS	SYMBOLS
equal symbol	=
plus symbol	+

GETTING STARTED

Prepare two sets of flashcards. Each set should include five plus (+) symbols, five equal (=) symbols and the numerals 1 through 5. Place both sets of cards inside one brown paper bag. Divide students into two equal teams.

Say, "Every student will pick a card from the paper bag and tell us what symbol or numeral is written on it. Each team will get one point for each correct answer. After each correct answer, the card is returned to the paper bag. The team with the most points wins the game."

Display a flannelboard with the following cutouts randomly placed: +, =, 4, 3, 1. Point to the plus symbol. Say, "What is the name of this symbol? What does it tell us?" Continue with the equal symbol. Say, "I want to use these cutouts to make a number sentence." Ask a student to come up to the flannelboard and unscramble the cutouts to make a number sentence.

Repeat this procedure using simple number sentences, emphasizing the placement of the symbols.

1.02.02

1.02.02.01 **identify a frame as a place for writing a missing numeral in a number sentence**

STRATEGY 1: Prepare a flannelboard and several cutouts. Ask one student to go to the flannelboard and another student to go to the chalkboard. Relate the following story.

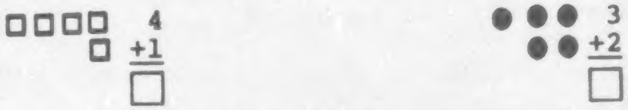
e.g.,

> Yesterday I went to the fruit store. I bought three apples and then I decided to buy two more apples. How many apples did I buy in all?

Ask the student at the flannelboard to display three apples and then two more apples while the student at the chalkboard writes the number sentence $3 + 2 =$. Place a cardboard frame after the equal sign. e.g., $3 + 2 = \square$. Say, "I placed a frame at the end of the number sentence because we do not know how many apples we have all together. The frame tells us that something is missing. Who can tell us how many apples I bought in all?" Write the numeral inside the frame. Repeat this procedure including missing addends as well as sums.

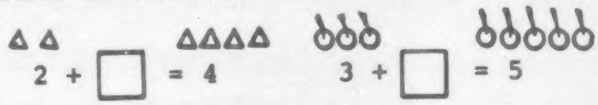
STRATEGY 2: Prepare and display the following chart.

e.g.,



Place a frame around the missing sums. Say, "I placed a frame here because a frame tells us that something is missing from the example. It tells us what we have to find." Ask students to fill in the missing sums on the chart. Continue this procedure using missing addends as well as sums.

e.g.,



1.02.02.02 **identify the plus (+) symbol in number sentences using vertical format**

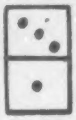
STRATEGY 1: Prepare a flannelboard, flannel cutouts, numerals and a flannel plus symbol. Display the following arrangement.

e.g., ♡ ♡ ♡ ♡
♡ ♡ ♡ ♡ ♡

Say, "How many hearts are there in the first group? Place the cutout of the numeral 4 next to first group." Repeat this procedure for the second group. Say, "I want to join the groups together in order to find the sum. What symbol do we use to join groups? Who can find the symbol?" Place the plus symbol to the left of the numeral 5. Repeat this procedure emphasizing the placement of the plus symbol.

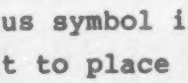
STRATEGY 2: Prepare and display a large dot card positioned vertically.

e.g.,



Say, "What number sentence can we write to tell about this card?" Ask a student to write the number sentence on the chalkboard. If the student writes 3 + 1 = 4, say, "Who can write this sentence a different way?" Place the dot card on the chalkboard and point to the top group. Say, "How many dots do we have in this group?" Write the numeral 3 next to that group.

e.g.,



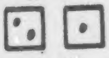
Repeat this procedure with the bottom group. Say, "What symbol do we use to join two groups? Who can write the plus symbol on the chalkboard? When we write the number sentence in this form (vertical), we place the plus symbol in front of the lower numeral." Ask a student to place the plus symbol in the number sentence.

1.02.02

STRATEGY 2: cont'd — Repeat this procedure varying the number sentences emphasizing the placement of the plus symbol.

1.02.02.03 **write the plus (+) symbol and the equal (=) symbol in number sentences, using both vertical and horizontal formats**

STRATEGY 1: Prepare and display a pair of dot cards placed horizontally on the chalkboard. e.g.,



Ask a student to write the matching numeral under each card. Say, "I want to join the two groups. What symbol do we use to join two groups?" Ask a student to place the plus sign between the cards to be added." Display the equal sign and ask a student to write it in the number sentence.

e.g.,

2 + 1 = 3

Arrange the dot cards in vertical format. Repeat the above procedure placing the numerals to the right of the dot cards. Say, "The bar has the same role as the equal sign in 2 + 1 = 3." Repeat the above procedure for number facts from 1 through 5.

STRATEGY 2: Display a magnetic board and discs. Place the following groups ●●● ●● on the board. Say, "Who can give us a number sentence for this arrangement?" Ask a student to write the number sentence on the chalkboard. Say, "What does the plus symbol tell us to do? What does the equal symbol show us?" Move the arrangement to show ●●● ●●. Say, "Who can write this number sentence?" Emphasize the placement of the plus sign and that the example is to be read from top to bottom. Name the bar as the sum line. Ask a student to write another symbol on the chalkboard which means the same thing as a sum line. Be sure to stress that the sum line means equal. Repeat the above procedure for number facts from 1 through 5.

P.O. 1.02.02.01

NAME:____CLASS:__________DATE:_______

Draw an X on the frame in each box.

$2 + 3 = \boxtimes$	$\square + 1 = 4$
$3 + \square = 5$	$1 + 4 = \square$
$\square + 1 = 5$	$1 + \square = 2$
$2 + \square = 3$	$2 + 2 = \square$

P.O. 1.02.02.02

NAME: ______________________ CLASS: __________ DATE: __________

Write the (+) symbol in the correct place.

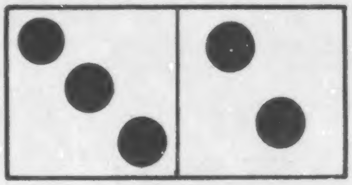
3 + 2 ☐	1 2 ☐	2 2 ☐	1 4 ☐
2 3 ☐	2 1 ☐	4 1 ☐	3 1 ☐

P.O. 1.02.02.03

NAME:______________________________________ CLASS:_________ DATE:_______

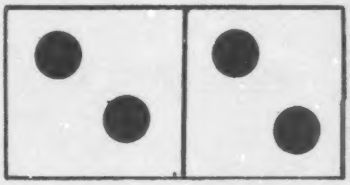
Write the (+) and (=) symbol in each box. Write the sum.

3 + 2 = ☐

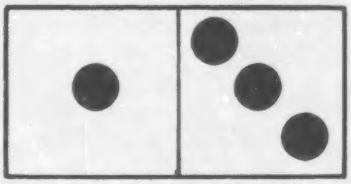


2
2

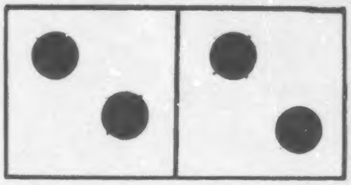
☐



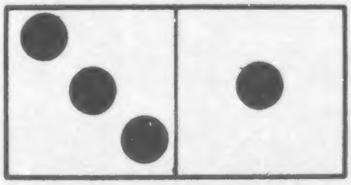
3
1
☐



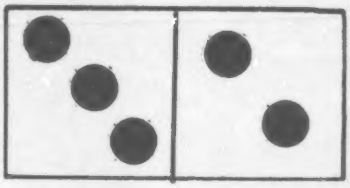
2 2 ☐



3 1 ☐



3
2
☐



1.02.03 COMMUTATIVE PROPERTY WITH SUMS THROUGH FIVE

(4 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.02.03.01A add two numbers having sums of 2 through 5, in both vertical and horizontal formats; e.g.,

$2 + 1 = 3$

$$\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$$

*1.02.03.02A identify the commutative property in addition with sums through 5; e.g.,

$2 + 1 = 3$ $1 + 2 = 3$

*1.02.03.03A write addition facts for sums through five, in both vertical and horizontal formats. e.g.,

+	1	2	3	4
1	2	3	4	5
2	3	4	5	
3	4	5		
4	5			

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1.02.03

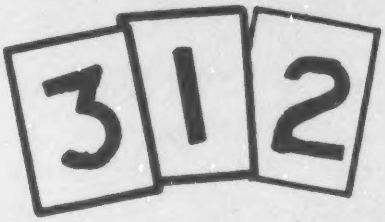
VOCABULARY

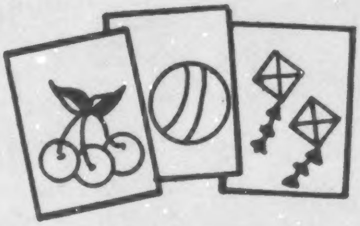
TERMS	**SYMBOLS**
equal symbol	=
plus symbol	+
sum	
the same as	

GETTING STARTED

Divide the class into equal groups with a maximum of five students in each group. Prepare five large cards, with the numerals 1 through 5 and five cards, with an equal number of objects. Ask the students to match the numeral card to the card with an equal number of objects.

e.g.,





Prepare and distribute envelopes containing five counting chips to each student. Say, "Put two chips on your desk. Take out one more chip. How many chips are on your desk? (3) Return all the chips to the envelope. Take out one chip. Take out three more chips. How many chips are on your desk?" (4)

Continue this procedure.

1.02.03

1.02.03.01 **add two numbers having sums of 2 through 5, in both vertical and horizontal formats**

STRATEGY 1: Prepare and distribute five counters to each student. Write 3 + 1 = on the chalkboard. Ask the students to arrange their counters horizontally. e.g., ○○○ ○

Say, "How many counters do we have in the first group? (3) ...in the second group? (1) How many in all?" (4)

Write $\begin{array}{r}3\\+1\\\hline\end{array}$ on the chalkboard. Say, "Make a group of three counters. Place one counter under the group of three.

e.g.,

○○○
    ○

Say, "How many counters are in the first group? (3) ...in the second group? (1) How many in all? (4) We can write addition examples, using the same numbers, in two different ways and the answer will be the same in both examples."

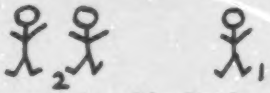
Continue this procedure for other examples with sums through five.

STRATEGY 2: Prepare and distribute five chips and an unlined sheet of paper to each student. Ask the students to fold their papers in half. Demonstrate. Say, "We will use our chips to make different number sentences. Put three chips on the left hand side of your paper. Place two more chips on the right hand side. How many chips do we have in all?" Direct the students to draw a picture of the chips and write the horizontal and vertical number sentence in their notebooks. Ask the students to use their chips to create and record their own number sentences.

1.02.03.02 **identify the commutative property in addition with sums through 5**

STRATEGY 1: Ask two students to come up to the front of the room. Say, "How many students are standing at the front of the room?" Draw two stick figures on the chalkboard and write the numeral 2 below them. Direct the students to do the same in their notebooks. Ask a third student to stand near, but not next to the two students in the front. Say, "How many more students came to up the front of the room?" Draw another stick figure on the chalkboard.

e.g.,



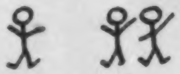
Say, "We want to find the number of students we have in all. First there were two students and then one more student joined them. Who can give us a number sentence to tell what happened?" Point to the numerals on the chalkboard. Say, "What sign should we use to show that we are adding?" Draw the plus sign between the 2 and the 1. Say, "Two plus one... what sign do we need to show that the two groups have been added together?" (equal sign) Draw an equal sign after 2 + 1. Say, "Two plus one equals..." Write the numeral 3 after the equal sign while the students do the same in their notebooks. Ask the students to change positions. Stand behind each group as you say, "How many students are in this group?" (one) Move behind the next group. Say, "How many students are in this group? (two) Have any students sat down? Have any students joined them? There are still three students, they just changed places. Who can tell us the number sentence to show what happened?" Draw another set of stick figures to show the

1.02.03

STRATEGY 1: cont'd

commutative property in addition and write the addition sentence underneath it.

e.g.,



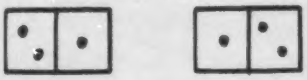
1 + 2 = 3

Continue this procedure with other sums through 5.

STRATEGY 2:

Prepare and distribute an 8" x 11" oaktag envelope and 5 counting chips to each student. Ask the students to fold the oaktag in half. Demonstrate. Say, "Take out two chips and place them on the left side of the fold. Take out one more chip and place it on the right side of the fold. How many chips are on the left side? (Two) Right side? (One) How many chips are there in all? (Three) Turn you paper around so that there is only one chip on the left and two chips on the right."

e.g.,



Say, "How many chips are on the left side now? (One) On the right? (Two) How many chips are there all together? (Three) Did we remove any chips? (No) Add any chips? (No) We turned our papers around, but we didn't change the number of chips. Two and one are three, and one and two are three." Continue the procedure, using different sums through five.

1.02.03.03 **write addition facts for the numbers one through five, in both vertical and horizontal formats**

STRATEGY 1:

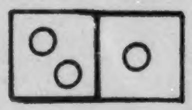
Prepare and distribute five counting chips and a placemat to each student. Ask the students to fold these placemats into two equal parts. Draw a

STRATEGY 1: cont'd

rectangle with a line through the center on the chalkboard. Say, "This is my placemat." The line is my fold. How many chips do you have? (five) We will use the chips to make different number sentences. We will put some of the chips on one side of the fold and some of the chips on the other side of the fold."

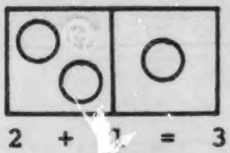
Demonstrate with magnetic discs on the chalkboard.

e.g.,



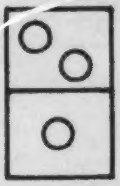
Ask the students to make the same arrangement on their placemats. Say, "How many chips are on the left side?" (two) Write the numeral 2 under the left side of the rectangle. Say, "How many chips are on the right side?" (one) Write the numeral 1 under the right side of the rectangle. Point to each side as you say, "There are two on this side and one on this side. What symbol tells us we will join the two sets?" (+) Write a plus (+) sign between the numerals. Say, "How many chips do we have all together?" Write an equal (=) sign and the numeral 3.

e.g.,



Draw another rectangle next to the first one.

e.g.,



Say, "Turn your placemats so that there are two chips on the top and one chip at the bottom. Did we change any of the chips? (No) There is another way to write the number sentence." Demonstrate at

1.02.03

STRATEGY 1: **cont'd**

the chalkboard. Say, "I have two at the top and one at the bottom.

e.g.,

$$\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$$

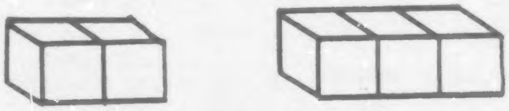
I drew a straight line instead of an equal sign. I have three chips all together."

Ask the students to remove their chips and turn their placemats back to the original position. After the number sentences have been written on the chalkboard ask the students to write them in their notebooks, e.g., 2 + 1 = 3 $\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$

Continue this procedure.

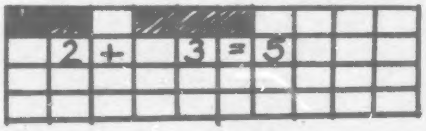
STRATEGY 2: Prepare and distribute five interlocking cubes, a crayon and grid paper (2cm x 2cm squares) to each student. Say, "We will use our cubes to make different number facts. Put your cubes in two groups."

e.g.,



Say, "I made one group of two cubes and one group of three cubes." Draw a grid on the chalkboard and shade in the corresponding arrangement.

e.g.,



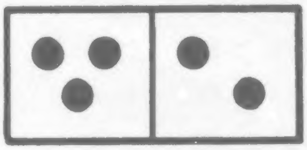
Say, "Do the same with your cubes and grid paper. Write the number fact under the squares you colored." Ask the students to turn their papers so that the arrangement now appears vertically. Write the example in vertical format under the arrangement.

Continue this procedure.

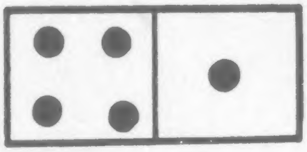
P.O. 1.02.03.01

NAME: ____________________ CLASS: __________ DATE: __________

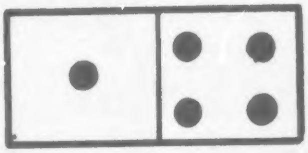
Write the addition fact for each picture.



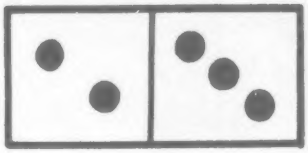
3 + 2 = 5



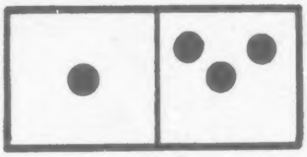
___ + ___ = ___



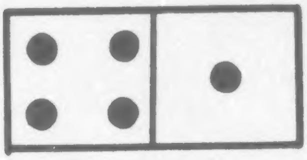
___ + ___ = ___



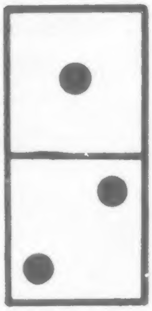
___ + ___ = ___



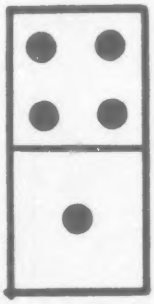
___ + ___ = ___



___ + ___ = ___



1
+ 2
___
3



+
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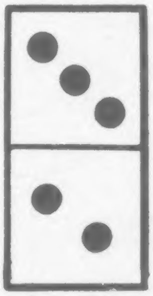

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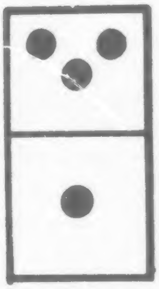

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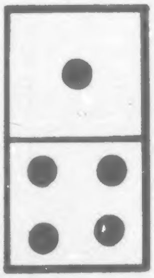

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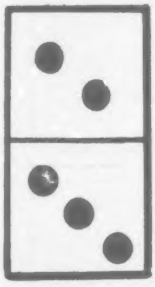

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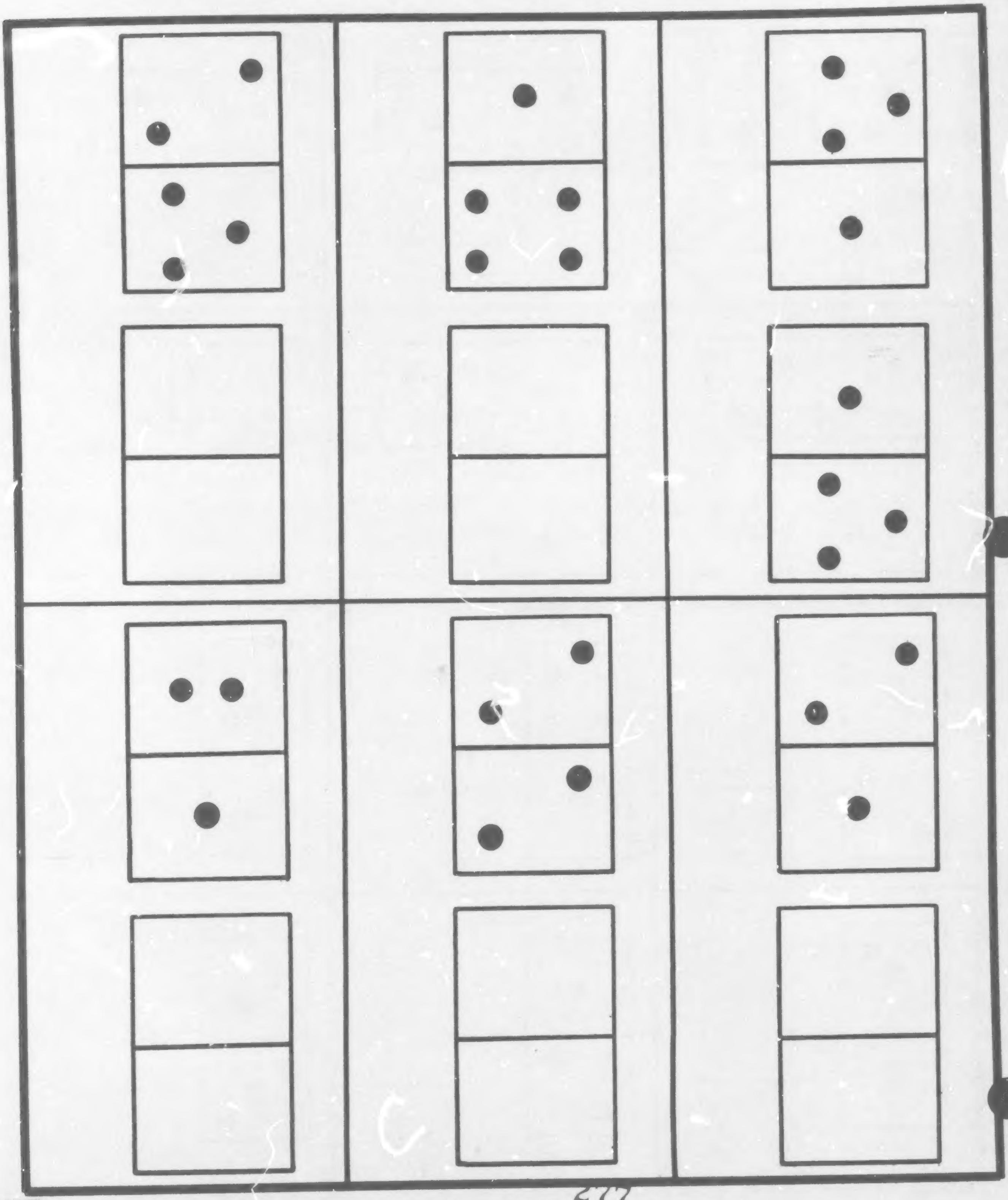
P.O. 1.02.03.02

NAME:____________________________________ **CLASS:**________ **DATE:**________

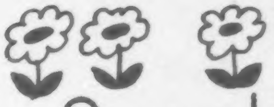
Turn the paper. Draw the set.



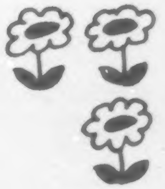
P.O. 1.02.03.03

NAME: ______________________ **CLASS:** ________ **DATE:** ________

Write the number sentence another way.

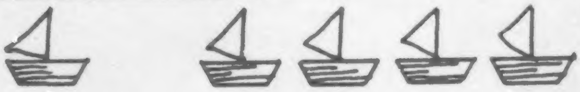


2 + 1 = 3

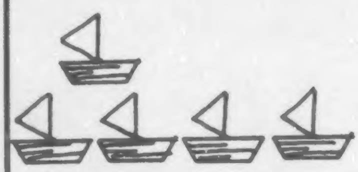


2
+1

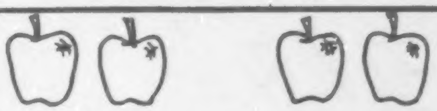
3



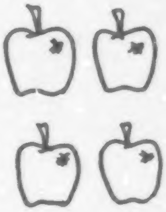
___ + ___ = ___



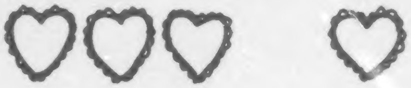
1
+4
___



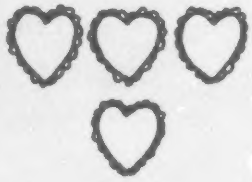
2 + 2 = ___



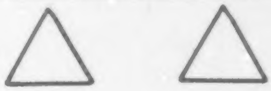
+___



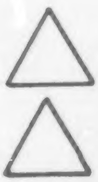
___ + ___ = ___



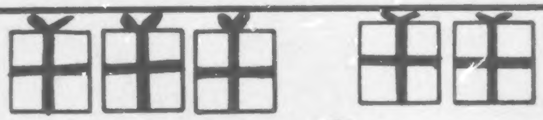
3
+1
___



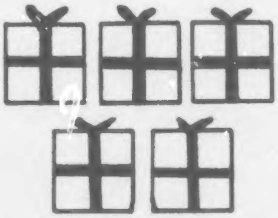
___ + ___ = ___



1
+1
___



3 + 2 = ___



+ ___

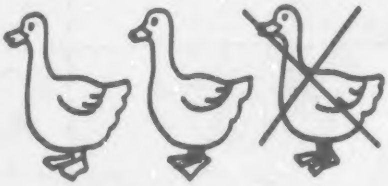
1.03.01 CONCEPT OF SUBTRACTION

(1 lesson)

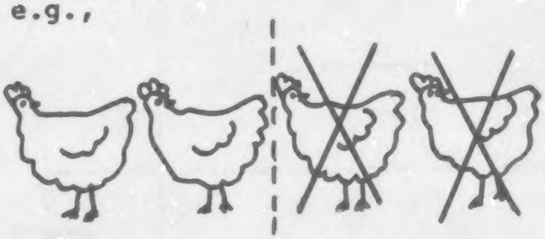
PERFORMANCE OBJECTIVES

The student will be able to...

*1.03.01.01A recognize that subtraction is the removal of members from a group;
e.g.,



*1.03.01.02A recognize that when a member is subtracted from a group, the resulting group is smaller than the original group.
e.g.,



1.03.01

VOCABULARY

TERMS	SYMBOLS
same, equal to	=
is more than	
is less than	
take-away	
fewer	

GETTING STARTED

Prepare and display five containers and five straws. Ask a student to put a straw in each container. Say, "Are there enough straws for each container? (Yes) How do we know?" (We put one straw in each container.) Take the straws out of the containers. Take one straw away. Ask a student to place a straw in each container. Say, "Are there enough straws for each container? (No) How do we know?" (One container does not have a straw.) Remove the straws and place them in front of the containers showing one-to-one correspondence. Say, "Which group has more - the containers or the straws? Which group has fewer - the containers or the straws?"

Repeat this procedure using other unequal sets.

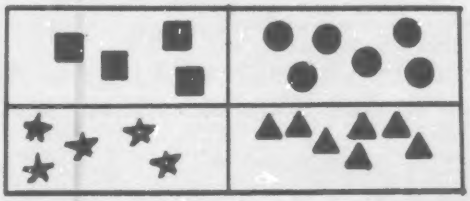
Prepare and display a number line, numbered 1 through 9. Ask one student to point to any number at random. Ask the other students to count backwards until the leader says, "Stop." Continue this procedure using other numerals as the starting point.

1.03.01

1.03.01.01 **recognize that subtraction is the removal of members from a group**

STRATEGY 1: Prepare and distribute nine chips to each student. Place nine magnetic discs on the chalkboard. Say, "How many chips do you have? How many discs do I have at the chalkboard?" Ask the students to remove two chips from their group. Say, "Do you still have nine chips in your group? What happened?" Remove some discs from the chalkboard. Say, "Do I still have nine discs on the chalkboard? What happened?" (Some discs were removed.) Ask the students to return the chips to their group and return the discs to the chalkboard. Continue this procedure removing various amounts of chips.

STRATEGY 2: Prepare and distribute paper folded into fourths and a 2cm x 2cm marker. Say, "Draw four squares in the first box, six circles in the second box, five stars in the third box and seven triangles in the last box." Demonstrate at the chalkboard.
e.g.,



Say, "Take your marker and cover one square in the first box." Do the same at the chalkboard. Say, "Are there still four squares in the first box? (No) What happened?" (One square was covered.) Repeat this procedure to complete the worksheet.

1.03.01

1.03.01.02 **recognize that when a member is subtracted from a group, the resulting group is smaller than the original group**

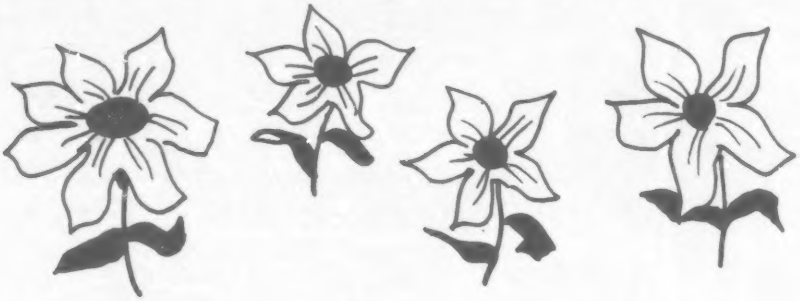
STRATEGY 1: Prepare and distribute nine chips to each student. Ask the students to place a finger over one chip. Say, "How many chips do you see? Is eight more than or less than nine?" Continue this procedure asking the students to cover one through eight chips. Each time, ask the students how many chips they see and if they see more or less than the original nine.

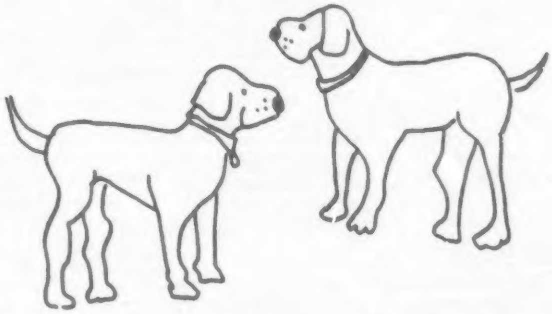
STRATEGY 2: Prepare and display a large container filled with objects, e.g., a tin filled with crayons. Walk around the room and show students that the tin is full. Reach into the tin and grab a handful of crayons. Say, "Are there the same amount of crayons in the tin now? Why not?" (No there are fewer objects now because some were taken away.) Return the crayons to the tin. Repeat this procedure asking the students to take turns removing different amounts from the tin. Emphasize that when something is removed, the new group will be smaller than the original group.

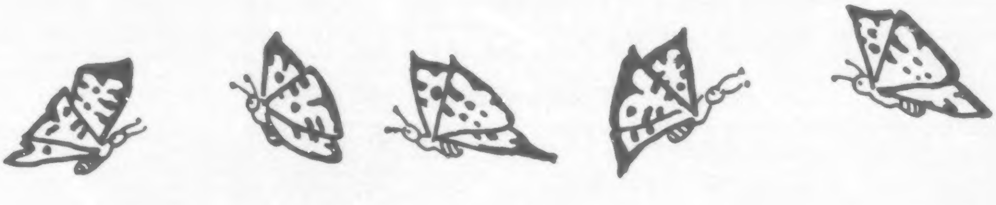
P.O. 1.03.01.01

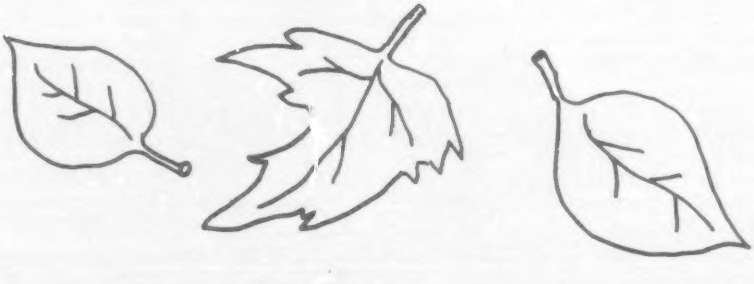
NAME: ______________________________ CLASS: __________ DATE: ________

Remove one object from each group.
Draw an X on the object you are removing.







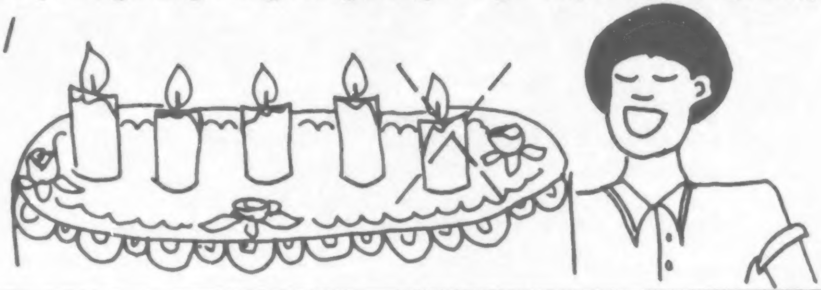


P.O. 1.03.01.02

NAME: ______________________________ **CLASS:** __________ **DATE:** __________

Cross out one object on each line. Circle the word that tells if the group which is left is bigger or smaller.

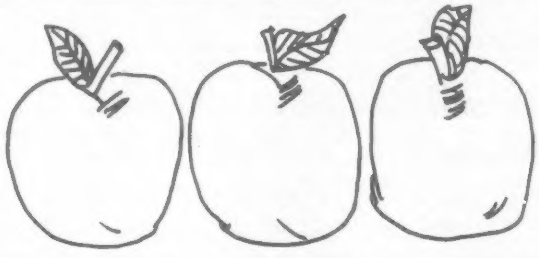
1



bigger

[✓ smaller]

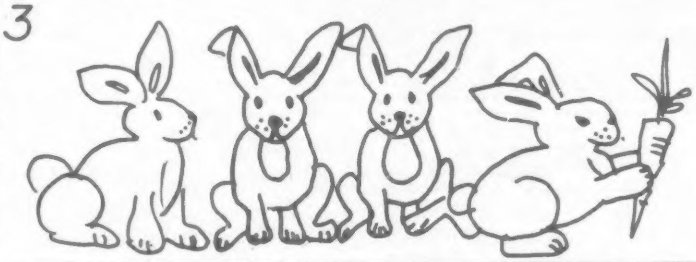
2



bigger

smaller

3



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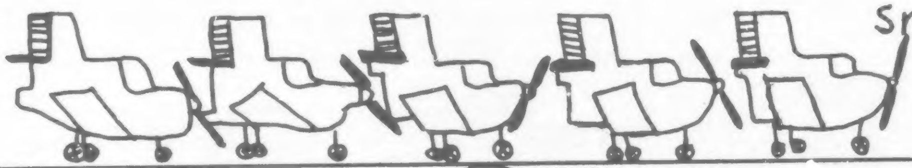
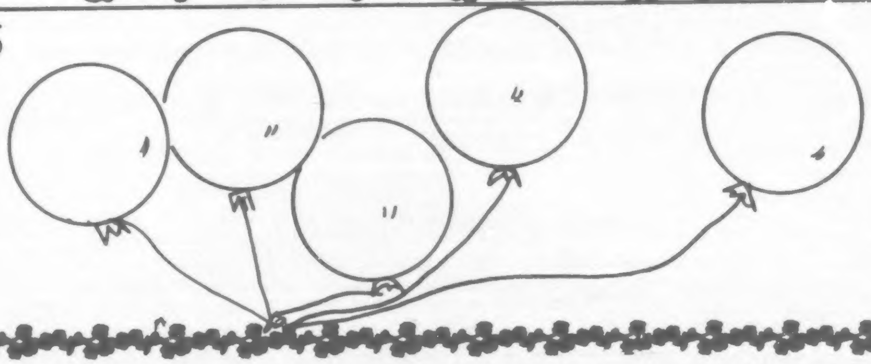
4



bigger

smaller

5



bigger

smaller

1.03.02 THE MINUS (-) SYMBOL

(1-2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.03.02.01A identify and write the minus (-) symbol;
e.g.,

1.03.02.02A distinguish between the plus (+) and minus (-) symbols;
e.g.,

+ or -

1.03.02.03B demonstrate that subtract, minus and take away are synonymous;
e.g.,

5 subtract 3 = 2
5 take away 3 = 2
5 - 3 = 2

1.03.02.04A identify the minus (-) symbol in a number sentence using both vertical and horizontal formats;
e.g.,

5 - 3 = 2 $\begin{array}{r}5\\ \underline{-3}\\ 2\end{array}$

*1.03.02.05A write the minus (-) symbol in a number sentence, using both vertical and horizontal formats.
e.g.,

$\begin{array}{r}5\\ \underline{3}\end{array}$ 5 3 =

1.03.02

VOCABULARY

TERMS	SYMBOLS
minus symbol	(-)
subtract	
take away	
remainder	
difference	
less than	

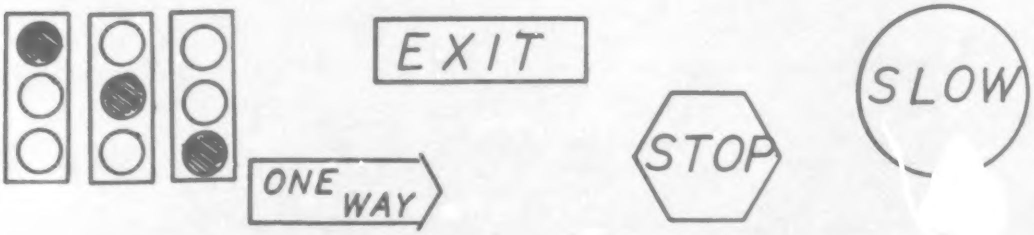
GETTING STARTED

Prepare and distribute a paper bag and ten counters to each student. Ask a student to put three counters in the class bag. Write 3 on the chalkboard. Ask another student to drop in two more counters. Write 2 on the chalkboard. Say, "How many counters are now in the bag?" (5) Empty the bag and ask another student to count the counters. Write 3 + 2 = 5 on the chalkboard.

Continue this procedure, using the words "plus" and "equal." Write the equations on the chalkboard, using (+) and (=).

Ask the students to follow the directions and place the counters in their own bags. Ask them to make up their own addition number sentences. Call attention to the (+) and (=) signs and remind the students that addition is the joining of groups.

Play "Traffic Trap." Prepare and display the following symbol cards on the chalkboard ledge.



Discuss what each symbol means. Say, "We are going to play Traffic Trap. We will do what the cards tell us. Drivers have to know all

GETTING STARTED cont'd

kinds of symbols and signs when they travel in order to be safe. We will pretend to be careful drivers today."

Ask three or four students to be "drivers." Ask several students to hold the symbol cards. Place the students holding the cards in strategic positions around the room. As the drivers move, they must obey each card as they reach it.

Continue the game giving everyone a chance to participate.

1.03.02

1.03.02.01 identify and write the minus (-) symbol

STRATEGY 1: Prepare and display a pile of five books on a table. Ask a student to count the books. Write the numeral 5 on the chalkboard. Ask another student to take away three of the books. Say, "How many books did you take away?" Write 5 take away 3 on the chalkboard. Ask a third student to count the remaining books. Say, "How many books are left?" Write 5 take away 3 is 2. Say, "Who remembers a symbol we can use in place of the word is?" Erase 'is' and substitute the equal sign. Say, "I will show you a symbol we can use in place of the words 'take away'. It is called a minus sign." Draw a minus symbol on the chalkboard. Ask a student to come up and erase the words "take away" and substitute the minus sign in its place.

Continue this procedure using other objects in the room to generate number sentences.

STRATEGY 2: Prepare and display five flannel birds on a flannel board. Say, "There were five birds sitting in a birdbath. Two flew away. How many were left?" Move the flannel pieces as you narrate the story. Say, "How many birds started at the birdbath? (Five.) How many birds flew away? (Two.) When we remove things from a large group, we subtract and the symbol we use to show that we subtracted something is called a minus sign." Draw the minus symbol on the chalkboard. Say, "This is the minus symbol." Write 5   2 on the chalkboard. Ask a student to write the minus symbol in the number sentence between the numerals 5 and 2.

Repeat this procedure using other flannel pieces and new stories. Be sure to stress the minus sign.

1.03.02.02 **distinguish between the plus (+) and minus (-) symbols**

STRATEGY 1: Prepare and display a paper bag and ten counters. Ask a student to place two counters in the bag. Ask another student to place two more counters in the same bag. Say, "We put two counters in the bag and then put in two more. Do we have more counters now? (Yes) We added counters to the number we started with. We joined groups of counters. When we join groups, we add. The name of the symbol that tells us to add is the plus (+) symbol."

Place a minus (-) symbol on the chalkboard. Say, "What does the minus (-) symbol mean? Subtraction is the opposite of addition. When we subtract, we take away or take out things from a larger group. We always use the minus (-) symbol when subtracting." Ask a student to put a handful of counters in the bag. Ask another student to come up and take some counters out of the bag. Say, "Remember, when we take out, we subtract. Always use the minus (-) symbol for subtraction."

Ask a student to point to the plus symbol or the minus symbol. Ask another student to put counters in the bag or take them out depending on the symbol chosen.

Continue the procedure.

STRATEGY 2: Prepare and distribute individual interlocking cubes and a placemat to each student. Use large cubes for demonstration. Say, "Place all your cubes at the top of your desk. Put one cube on your placemat. Put four more cubes on your placemat. Connect them. How many cubes do we have? Let's count them. What did we do?" (Joined the two groups.)

STRATEGY 2: cont'd

Say, "When we write a number sentence to show that we are going to add or join groups, we always use the plus (+) symbol. Let's write a sentence to show what we did." Place the following chart on the chalkboard:

Join together (+)
1 + 4

Ask the students to clear their placemats. Say, "Minus means to take away from the large group. Put five cubes on your placemat. Take away three cubes. How many are left? (2) When we take away, we are subtracting. We use the minus (-) symbol in a number sentence to show we are subtracting." Write the following heading on another chart and record the story. e.g., Take away (-)
5 - 3

Repeat this procedure for addition and subtraction using the cubes, emphasizing the plus (+) and minus (-) signs. Record the stories on the proper charts.

1.03.02.03 **demonstrate that subtract, minus and take away are synonymous**

STRATEGY 1: Prepare and display a flannelboard, a bunny rabbit and cutout carrots. Distribute a rexographed bunny and carrots to each student. Tell the following story:

> "Our bunny is in the carrot garden. He picks 5 carrots and puts them in his basket. Mr. Squirrel takes 2 of the carrots. How many carrots are left?"

Have the students enact the story using their materials while one student demonstrates at the chalkboard.

STRATEGY 1: cont'd

Say, "How many carrots did the bunny pick? How many carrots did Mr. Squirrel take away? How many carrots did bunny have left in his basket?"

Ask a student to repeat the story while you write the number sentence on the chalkboard.
e.g., 5 - 2 = 3.
Say, "We have other ways of saying take away.
e.g.,

5 take away 2 is 3
5 subtract 2 is 3
5 minus 2 is 3

Take away, subtract and minus all tell us the same thing."

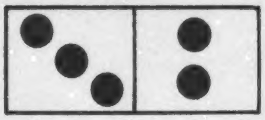
Continue with other subtraction stories, interchanging the words subtract, minus and take away, e.g., say, "Six minus three equals three. Who would like to tell us the same story using a different word for minus?"

STRATEGY 2: Distribute 5 interlocking color cubes to each student. Say, "The words minus and take away mean the same thing as subtract. Whenever you hear the words subtract, minus or take away, you know we will always do subtraction. Join five cubes. Count your cubes to see that you have five. Count two cubes and take them away from the 5 joined cubes."

Continue this procedure varying the number to be taken away and the words take away, subtract and minus.

1.03.02.04 **identify the minus (-) symbol in a number sentence using both vertical and horizontal formats**

STRATEGY 1: Prepare a large set of oaktag dot cards. Form horizontal subtraction sentences by displaying the cards horizontally. Say, "This card has 5 dots. What symbol do we use when doing subtraction? (The minus (-) symbol.) Today we are going to write our own subtraction number sentences using dot cards. In subtraction, the larger number comes first. e.g.,



5 - 2 = 3

How many dots are on the dot card?" (5) Write 5 on the chalkboard. Say, "Remember we are subtracting. What symbol shows subtraction?" (The minus (-) symbol.) Place a minus (-) symbol on the chalkboard. Say, "Let's subtract 2." Fold the dot card to hide two dots. Write a 2 after the minus (-) symbol. Say, "The number sentence we wrote tells us to take 2 away from 5. The minus symbol tells us what to do."

Repeat this procedure by asking students to choose other dot cards. Adapt the procedure in strategy 1 for vertical format turning cards in the vertical direction.

STRATEGY 2: Prepare and display a flannelboard and cutouts. Say, "I am going to tell you a story and then I will ask someone to go to the flannelboard and make a picture story. Yesterday I saw five birds on a branch. Two birds flew away." Ask a student to place five birds on the flannelboard and the flannel number 5 below them. Say, "How many birds flew

STRATEGY 2: cont'd

away?" (2) Take away two birds. Place a flannel 2 near the 5. Say, "We took away two birds. In order to show take away we use a minus symbol." Place a minus (-) symbol after the 5 to show subtraction. Ask a student to identify the minus symbol.

Repeat this procedure using stories, pictorial representations and horizontal and vertical subtraction formats. Place the birds in a horizontal or vertical direction on the flannnelboard to correspond with strategy used.

1.03.02.05 **write the minus (-) symbol in a number sentence using both vertical and horizontal formats**

STRATEGY 1:

Prepare and distribute paper, a bead string (with one end knotted) and 5 beads to each student. Say, "Today we are going to use our bead strings to help us subtract. String 5 beads. Take away two of the beads on your string. Write a number sentence to show what we did." Write 5 - 2 = and $\begin{array}{r}5\\-2\\\hline\end{array}$ on the chalkboard. Say, "We started with 5 beads. (Point to five in each example.) We took away... (point to the minus sign) two. (Point to the two.) In subtraction, as in addition, we have two ways of writing a number sentence. We can write it across or down. The minus (-) symbol always appears before the number to be taken away."

Continue this procedure asking the students to write the number sentence each time the beads are moved.

STRATEGY 2: Prepare and display four trees and 14 leaves cut from construction paper. Attach the leaves in the following manner on each tree. On tree #1 attach 5 leaves, on tree #2 attach 4 leaves, on tree #3 attach 3 leaves and on tree #4 attach 2 leaves.

Relate the following story: "This tree (point) has four leaves. A big wind came and blew three leaves to the ground. Who can come up and be the wind?" Ask a student to demonstrate the removal of the leaves. How many leaves were left on the tree?" Write the number sentence on the chalkboard in horizontal and vertical format.

e.g.,

$$4 - 3 = \qquad \begin{array}{r} 4 \\ \underline{-3} \end{array}$$

Say, "What does this say? (Point to horizontal format.) What does this say? (Point to vertical format.) They are the same. This line (point to the line in the vertical example) means equal. (Point to the equal symbol.) This is the equal symbol."

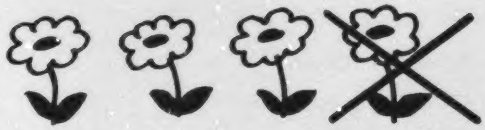
Repeat this procedure using other trees and record the number sentences in both formats.

P.O. 1.03.02.01

NAME: ______________________ **CLASS:** __________ **DATE:** ________

Circle the minus sign in each box. Write the minus sign under the picture.

+ (−)



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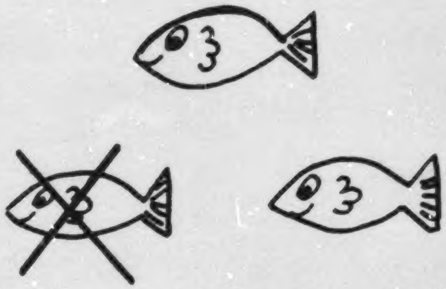

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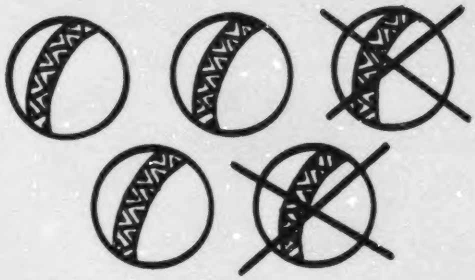

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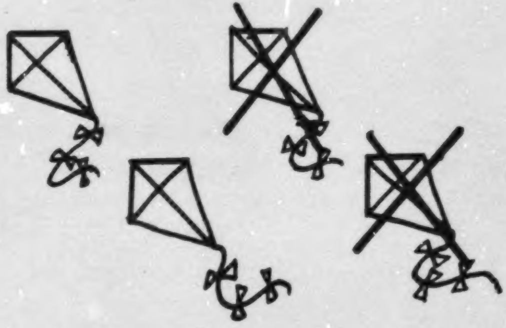

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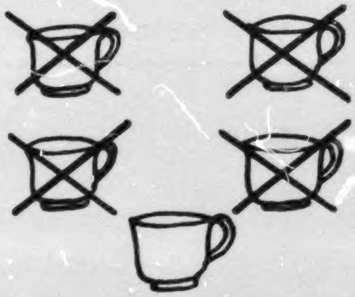

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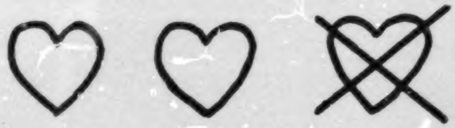
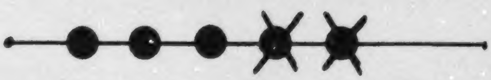
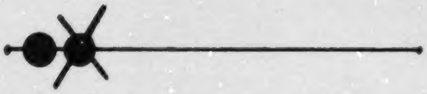


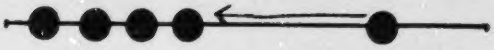
P.O.1.03.02.02

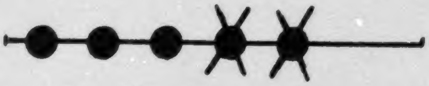
NAME: ____________________ CLASS: ________ DATE: ________

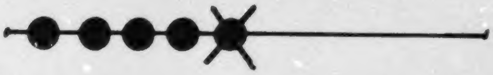
Look at the number line. Write (+) or (-).

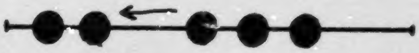


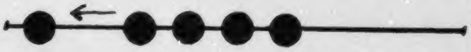


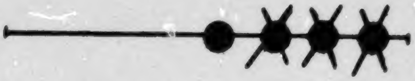


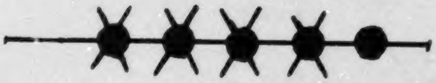


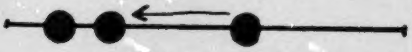








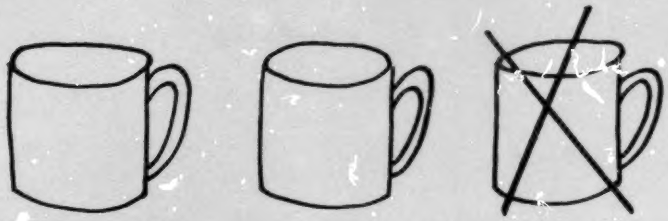
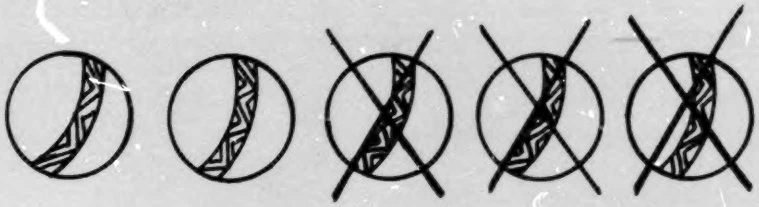
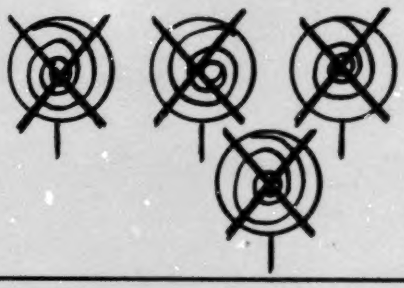
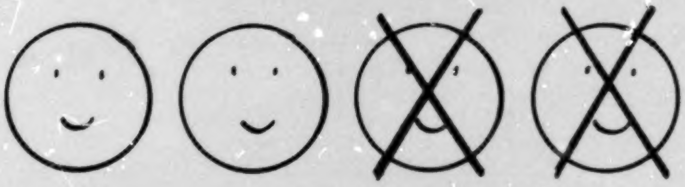
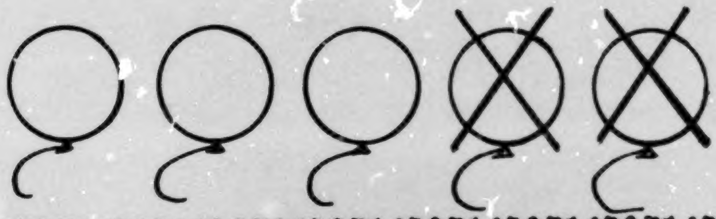




P.O. 1.03.02.03

NAME: ______________________________ CLASS: ________ DATE: _______

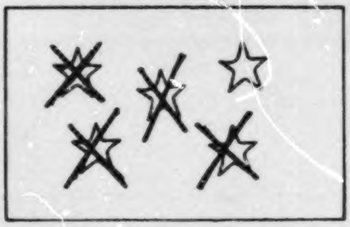
TEACHER: Read each number story to students varying language to say subtract, take away or minus.

P.O. 1.03.02.04

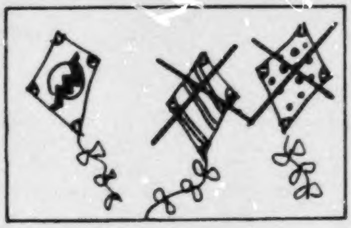
NAME:____________________ CLASS:________ DATE:_______

Circle the minus sign. Write the minus sign in the number sentence.



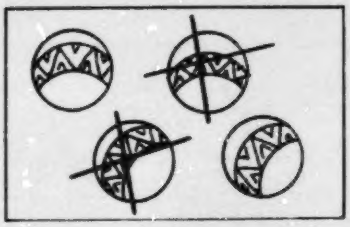
+ [✓ −]

5 − 4 =



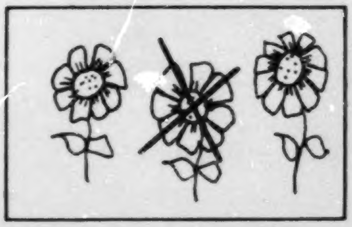
+ −

3 2 =



+ −

4 2 =



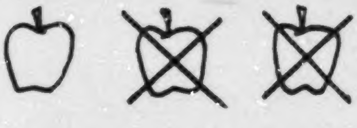
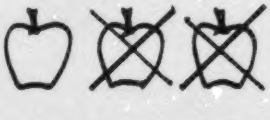
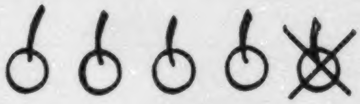
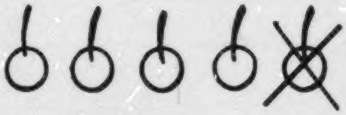
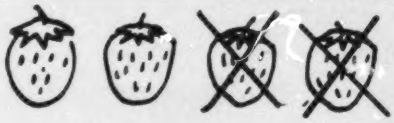
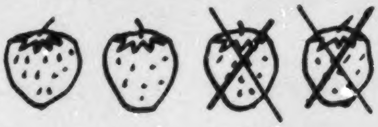
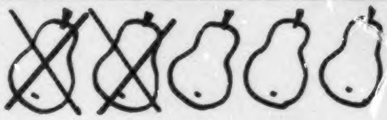
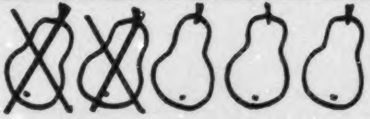
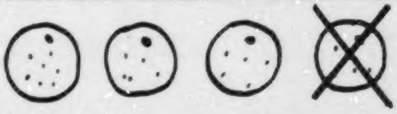
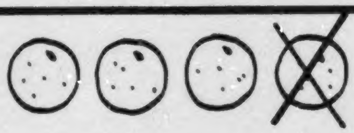
+ −

3 1 =

P.O. 1.03.02.05

NAME: ______________________ CLASS: ________ DATE: ________

Write the minus sign.

 3 --- 2 =	 3 --- 2
 5 1 =	 5 1
 4 2 =	 4 2
 5 2 =	 5 2
 4 1 =	 4 1

Unit 32

1.03.03 SUBTRACTION FACTS THROUGH FIVE

(2-3 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.03.03.01A subtract numbers to obtain differences from 1 through 5, in both horizontal and vertical formats;

e.g.,

$$\begin{array}{rr} 5 & 4 \\ \underline{-1} & \underline{-3} \\ 4 & 1 \end{array} \qquad \begin{array}{l} 5 - 1 = 4 \\ 4 - 3 = 1 \end{array}$$

*1.03.03.02A write a subtraction sentence using both the horizontal and vertical formats for minuends through 5.

e.g.,

$$\begin{array}{r} 5 \\ \underline{-3} \\ 2 \end{array} \qquad 4 - 1 = 3$$

1.03.03

VOCABULARY

TERMS	SYMBOLS
minus	(-)
subtraction	
difference	
take away	

GETTING STARTED

Prepare and display two number cubes. One cube should have only the numbers 1 and 2 and the other cube 1, 2 and 3. Ask the students to form a circle in the middle of the room. Say, "Today we are going to play a game with numbers." Roll one of the cubes and say, "What number did I roll?" (2) Write that number on the chalkboard. Roll the second cube and elicit the number rolled. (3) Write that number directly under the first number and insert the symbol for addition. e.g., $\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$. Ask a student to read the example. Say, "Who can tell us what we are going to do with these numbers? (add them) How do you know?" (plus sign) Ask the students to add the numbers and write the sum under the example.

Repeat this procedure, allow the students to roll the cubes and write the number sentences on the chalkboard.

Ask five students to stand up. Say, "How many students are standing?" Ask three of the students to sit down. Say, "Are there still the same number of students standing? (No) Why?" (There are fewer students because some students sat down.)

Ask a student to hold up three crayons. Ask the student to give two away. Say, "Does John still have three crayons? (No) Why? (There are less because some were given away.) When objects are taken away, the remaining group will have fewer objects than the original group."

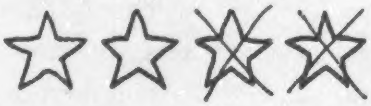
Continue this procedure.

1.03.03

1.03.03.01 subtract numbers to obtain differences from 1 through 5, in both horizontal and vertical formats

STRATEGY 1: Draw a group of four stars on the chalkboard. Cross out two stars.

e.g.,



Say, "How many stars did we start with? (4) How many stars did we cross out?" (2) Write the subtraction sentence, 4 - 2 = ☐ on the chalkboard. Say, "What is the answer?" (2) Ask a student to read the number sentence orally. (4 - 2 = 2) Write the example vertically and ask for the difference, e.g., $\begin{array}{r} 4 \\ \underline{-2} \\ 2 \end{array}$

Follow this procedure using different examples.

STRATEGY 2: Prepare and distribute five counters to each student. On the chalkboard draw a tree having five apples. Say, "Today we are going to pick some apples from the tree. Use your counters to show how many apples are on the tree." Erase two apples and ask the students to take away the same number of counters. Say, "How many apples are left on the tree?" (3) Write 5 - 2 = 3 on the chalkboard. Review the number sentence orally. Reinforce the understanding that we subtract to find the difference between two numbers. Tell the story again.

Write $\begin{array}{r} 5 \\ \underline{-2} \\ 3 \end{array}$ on the chalkboard.

Say, "We can write the example two ways. The difference or the answer is still the same."

Repeat this procedure using different numbers.

1.03.03

1.03.03.02 **write a subtraction sentence using both the horizontal and vertical formats for minuends through 5**

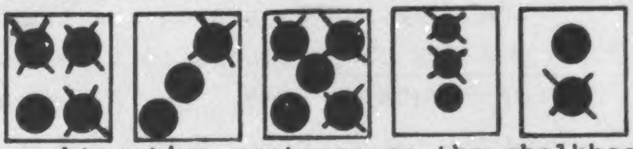
STRATEGY 1: Prepare and display a plastic ball and five milk containers. Place the milk containers on the floor in the middle of the classroom. Say, "Today we are going bowling." Demonstrate by rolling the ball at the milk containers. Say, "How many milk containers did we have? (5) How many were knocked down? (2) How many are left?" (3) Write 5 - 2 = 3 on the chalkboard. Say, "This shows that 5 minus 3 equals 2." Ask the students if there is a different way of writing the subtraction sentence.

e.g.,
$$\begin{array}{r} 5 \\ \underline{-2} \\ 3 \end{array}$$

Allow the students to take turns bowling. Ask individual students to write the subtraction sentence for their bowling game on the chalkboard in two formats.

STRATEGY 2: Prepare twenty oaktag cards which illustrate subtraction sentences.

e.g.,



Write a subtraction sentence on the chalkboard.

e.g.,
$$\begin{array}{r} 4 \\ \underline{-3} \\ 1 \end{array}$$

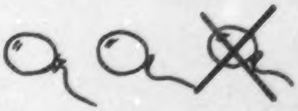
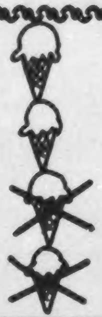
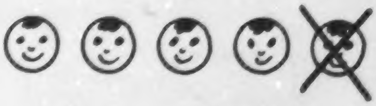
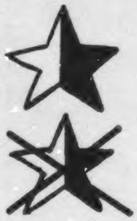
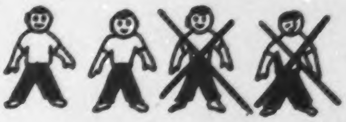
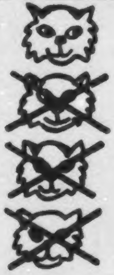
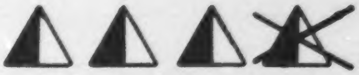
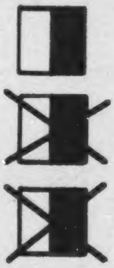
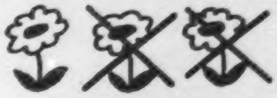
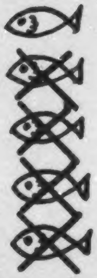
Display five cards on the ledge of the chalkboard, one of which will illustrate this example. Ask a student to go to the chalkboard and select the correct card. Then ask the student to write the same subtraction sentence in a different way on the chalkboard, e.g.,4 - 3 = 1.

Repeat this procedure using the different subtraction sentences shown on the oaktag cards.

P.O. 1.03.03.01

NAME: ____________________ **CLASS:** ________ **DATE:** ________

Complete the subtraction sentences for each picture.

 $3 - \boxed{1} = \boxed{2}$	 $\begin{array}{r} 4 \\ -\boxed{2} \\ \hline \boxed{2} \end{array}$
 $5 - \boxed{} = \boxed{}$	 $\begin{array}{r} 2 \\ -\boxed{} \\ \hline \boxed{} \end{array}$
 $4 - \boxed{} = \boxed{}$	 $\begin{array}{r} 4 \\ -\boxed{} \\ \hline \boxed{} \end{array}$
 $4 - \boxed{} = \boxed{}$	 $\begin{array}{r} 3 \\ -\boxed{} \\ \hline \boxed{} \end{array}$
 $3 - \boxed{} = \boxed{}$	 $\begin{array}{r} 5 \\ -\boxed{} \\ \hline \boxed{} \end{array}$

P.O. 1.03.03.02

NAME: ________ CLASS: ________ DATE: ________

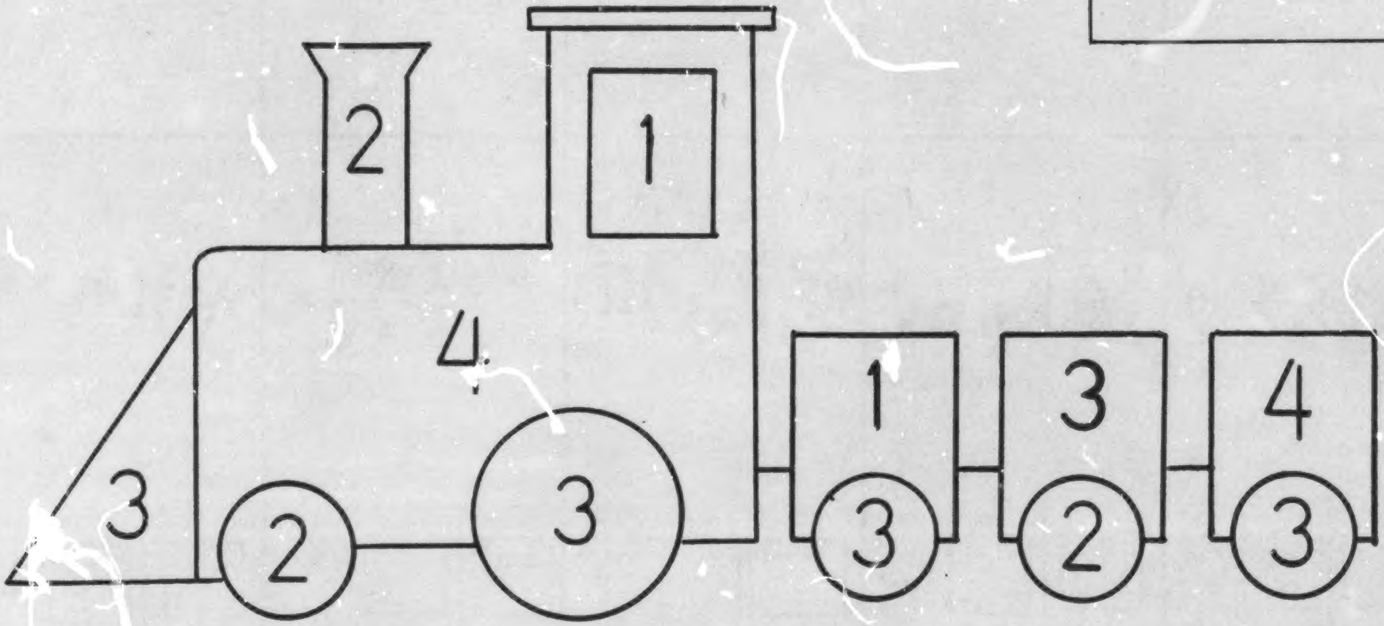
Do the examples. Match your answer to the color key.
Color the train.

$4-3=\square$ $2-1=\square$ $5-2=\square$

$\begin{array}{r} 5 \\ -1 \\ \hline \square \end{array}$ $\begin{array}{r} 3 \\ -2 \\ \hline \square \end{array}$ $\begin{array}{r} 4 \\ -2 \\ \hline \square \end{array}$

KEY

1 - BLUE
2 - YELLOW
3 - RED
4 - GREEN



- 38b -

1.03.04 NUMBER FAMILIES THROUGH FIVE

(2 lessons)

PERFORMANCE OBJECTIVES

The student will be able to...

*1.03.04.01A identify related addition and subtraction facts through five;

e.g.,

$3 + 2 = 5 \qquad 5 - 2 = 3$

$2 + 3 = 5 \qquad 5 - 3 = 2$

1.03.04.02B choose operation symbols for facts having sums and differences through 5.

e.g.,

$2 \oplus 3 = 5$

$5 \ominus 3 = 2$

1.03.04

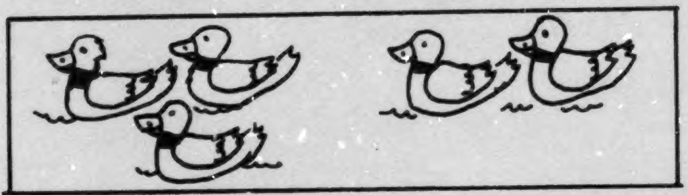
VOCABULARY

TERMS	SYMBOLS
plus	+
minus, take away	-
equal, is, same	=

GETTING STARTED

Prepare and display picture story cards. e.g., 3 ducks joining 2 ducks. Ask a student to tell the story. Ask another student to write the number sentence that tells the same story.

e.g.,



Continue this procedure using other story cards.

Prepare and display 5 magnetic discs on a chalkboard. Ask a student to take away some of the discs. Write the matching number sentence on the chalkboard, e.g., 0000$\cancel{0}$ 5 - 1 = ☐. Repeat this procedure for other subtraction facts through 5.

1.03.04

1.03.04.01 identify related addition and subtraction facts through five

STRATEGY 1: Ask three students to stand together in one group and ask two students to stand together in a separate group. Say, "How many students are in the first group? The second group? How many students are there all together?" Reverse the groups and say, "How many are in the first group? The second group? Are there still five in all?" (Yes) Ask the five students to stand in one group and ask two students to move away. Say, "How many are left? (three) Why? (We took away two.) How can we get the five back?" (Add them together.) Ask the five students to stand in a group again and ask three to move away. Say, "How many are left? (two) Why? (We subtracted.) How can we get the five back?" (Add them together.) Write the numerals 2,3,5 on the chalkboard and elicit four related addition and subraction facts.

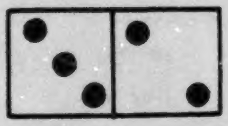
e.g.,

$2 + 3 = 5$, $3 + 2 = 5$, $5 - 2 = 3$, $5 - 3 = 2$.

Continue this procedure for other number families.

STRATEGY 2: Prepare and distribute domino dot cards and counters. Display a domino dot card:

e.g.,



Ask the students to place the same card on their desks and place counters on top of the dots. Say, "Who can make two addition sentences for this card?" ($3 + 2 = 5$, $2 + 3 = 5$) Write these on the chalkboard.

Bend back one part of the card, to show $5 - 2 = 3$, and then the other part, to show $5 - 3 = 2$. Ask

STRATEGY 2: cont'd

for the subtraction facts, and write these examples on the chalkboard, e.g., 5 - 3 = 2, 5- 2 = 3. Say, "Which numbers are in these stories?" Write 2,3,5 in a house above the four examples. Say, "This is a number family and they live together in a house. They love to tell four number sentences about themselves." (3 + 2 = 5; 2 + 3 = 5; 5 - 2 = 3; 5 - 3 = 2)

Point to the facts. Say, "Five insists on coming first. Why?" Continue developing this concept with 1,4,5 and 1,3,4.

Ask the students to write a number family story in their notebooks. Share the four stories each student wrote with the others.

1.03.04.02 choose operation symbols for facts having sums and differences through 5

STRATEGY 1: Prepare and display 5 objects and two frames on a flannelboard. Ask a student to count the objects. Place a frame around two objects and another frame around three objects. Say, "How many are there in each group? Let's put the two groups together. How many objects are there in all?" Write the number sentences on the chalkboard 2 + 3 = 5. Say, "We used the plus sign because we added." Ask another student to come to the flannelboard and tell how many objects he/she sees. Remove three objects. Say, "How many objects are left? We started with five and we took away three. We have two left. We can write a number sentence to tell this story." Write 5 3 = 2 on the chalkboard. Say, "Which symbol must we use to show we took something away?" (minus) Ask a student to go to the chalkboard and write the minus symbol between the 5 and the 3.

1.03.04

STRATEGY 1: cont'd
Continue this procedure varying addition and subtraction facts through 5.

STRATEGY 2:
Prepare and distribute five counters and a plastic cup to each student. Say, "Place four counters on your desk. Take one away. How many are left? Write a number story to show what we did." Write 4 - 1 = 3 on the chalkboard. Say, "Why did we use the minus sign?"

Continue this procedure using other addition and subtraction examples.

P.O. 1.03.04.01

NAME:____________________ CLASS:________ DATE:_______

Write the number families.

2,3,5

2 + 3 = 5

3 + 2 = ☐

5 - 3 = ☐

5 - 2 = ☐

1,4,5

1 + 4 = ☐

4 + 1 = ☐

5 - ☐ = ☐

5 - ☐ = ☐

1,3,4

1 + 3 = ☐

☐ + ☐ = ☐

4 - ☐ = ☐

4 - ☐ = ☐

1,2,3

☐ + ☐ = 3

☐ + ☐ = 3

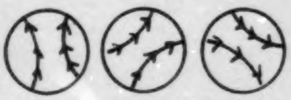
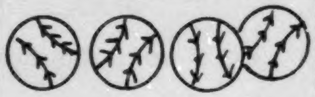
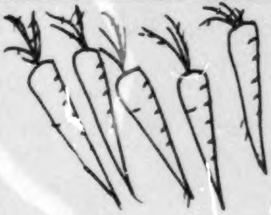
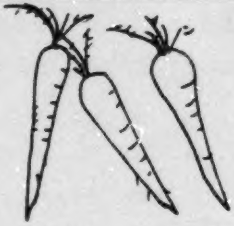
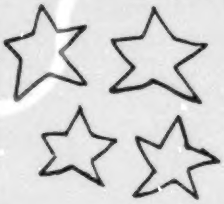
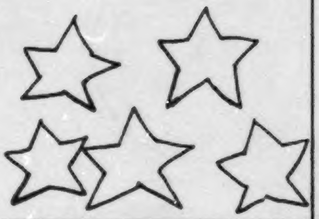
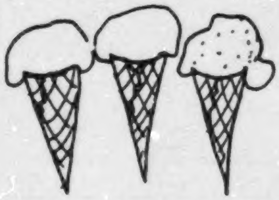
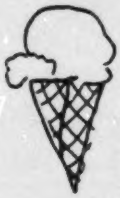
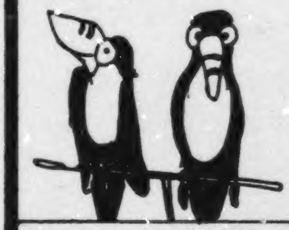
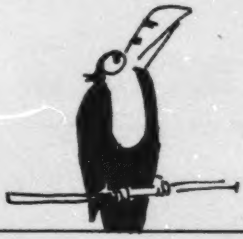
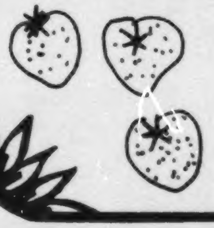
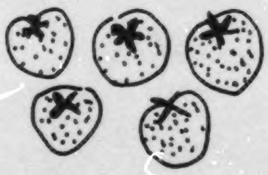
3 - ☐ = ☐

3 - ☐ = ☐

P.O. 1.03.04.02

NAME:____________________ CLASS:________ DATE:________

How many did you have? How many do you have now? Do you have more or less? Write the missing symbol (+ or -) in the frame.

I had	Now I have	More or Less	Number Sentence
		More	3 $\boxed{+}$ 1 = 4
			5 ☐ 2 = 3
			4 ☐ 1 = 5
			3 ☐ 2 = 1
			2 ☐ 1 = 1
			3 ☐ 2 = 5

1.10.11 TIME TO THE HOUR

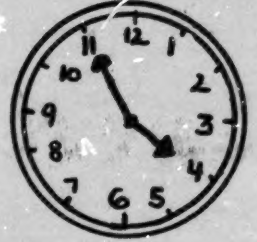
(2 lessons/ongoing)

PERFORMANCE OBJECTIVES

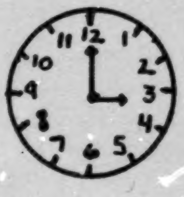
The student will be able to...

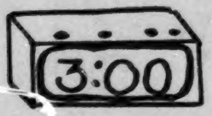
*1.10.11.01A identify the hour hand (short hand) and minute hand (long hand) of the clock; e.g.,

Point to the hour hand.
Point to the minute hand.



*1.10.11.02A read time on a standard and digital clock on the hour (o'clock).
e.g.,





What time does the clock show?
Three o'clock.

3 o'clock ———> 3:00

1.10.11

VOCABULARY

TERMS

hour
minute

GETTING STARTED

Display a clock with movable hands. Ask the students to name their favorite T.V. programs. Say, "Each program begins and ends at a certain time. What do we use to tell time?" Discuss the importance of time.

Point to the clock. Say, "What can you tell us about a clock?" (It has numerals and hands.) Ask the students to read the numerals on the clock. Say, "Who can tell us what the hands of the clock do?" (They move around in a circle.) Demonstrate the movement of the hands on the oaktag clock. Say, "Pretend you are the hands of a clock and trace a circle in the air. Count 1 through 12 as you trace the circle."

Prepare twelve small oaktag cards with the numerals 1 through 12. Say, "Who can tell us why we use a clock? How many numerals are there on a clock? How many hands are there? What do the hands of a clock do?"

Display a flannelboard and the twelve cards on the chalkboard ledge. Ask twelve students to select a card. Say,"We are going to make believe that we are a clock. What shape will our clock be? (circle) What numeral should we start with?" (1) Show a circle on the flannelboard and instruct the student holding the numeral 1 to start the circle by placing his card on the flannelboard. Each student with a card continues, in counting order, to form the circle to make the face of a clock. The students may refer to the clock in the classroom to check their positions. After the circle is completed, ask each student to count 1 through 12 pointing to the numeral as it is said.

1.10.11

1.10.11.01 identify the hour hand (short hand) and minute hand (long hand) of the clock

STRATEGY 1: Construct a clock with two movable hands. Point to the numerals on the clock and say, "How many numbers are on a clock?" Point to the hands of the clock and say, "These are the hands. There are two hands. They help us tell the time. Do both hands look the same? The short hand is called the hour hand and the long hand is called the minute hand." Move the hour or minute hand around and say, "Which hand am I moving?" Ask a student to place the hour hand on a number. Then ask another student to place the minute hand on a different number.

Repeat this procedure.

STRATEGY 2: Prepare and distribute cardboard clocks with movable hands. Display a clock with movable hands.

Say, "What can you tell us about the hands of the clock? The short hand is called the hour hand and the long hand is called the minute hand." Move the hour or minute hand around and say, "Which hand am I moving?" Ask a student to move the hands of the demonstration clock to different numerals as the others use their clockfaces. Move the hands of the clock to different numerals and say, "Where is the hour hand? Where is the minute hand?"

1.10.11.02 read time on a standard and digital clock on the hour (o'clock)

STRATEGY 1: Prepare and display a clock with movable hands, a digital clock and a rexographed sheets of four clockfaces hands.

Point to the clock with the movable hands and identify the long and short hands. Move the hands

STRATEGY 1: cont'd

to one o'clock and say, "Who can point to the hour hand? the minute hand? When the long hand (minute hand) is pointing to the twelve, the time is on the hour. The short hand (hour hand) is pointing to the one. Since the hour hand tells which hour it is, it is one o'clock." Repeat this procedure for 2 through 12 o'clock.

Display the digital clock (or picture) and explain how to read time to the hour. Ask various students to read one through twelve o'clock, e.g., 1:00 is one o'clock..

Write the following on the chalkboard.

I get up at 7 o'clock.
I come to school at 8 o'clock.
I leave school at 3 o'clock.
I go to bed at 9 o'clock.

Say, "Copy each sentence under a different clock on your paper. Draw the long and short hands on each clock to match the time in the sentence."

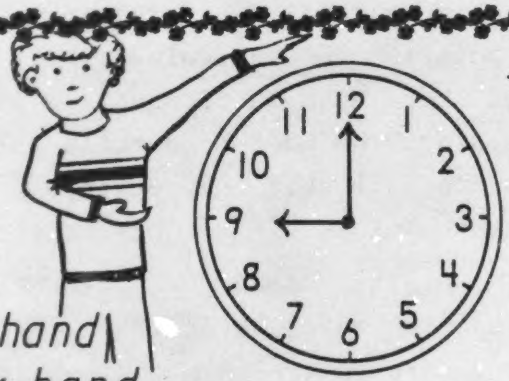
STRATEGY 2: Prepare a set of cards with time to the hour in digital form, pictures of a youngster waking up, eating dinner and going to bed and a clock with movable hands. Arrange the pictures on the chalkboard ledge. Draw blank clocks above each picture. Say, "John gets up at eight o'clock, eats dinner at five o'clock and goes to bed at seven o'clock." Ask three students to draw in the hands on the clocks and read the time. Ask three other students to match the time on the digital card with a clock and picture on the chalkboard.

Repeat this procedure using other hours and students.

P.O. 1.10.11.01

NAME: ______________________ CLASS: __________ DATE: ________

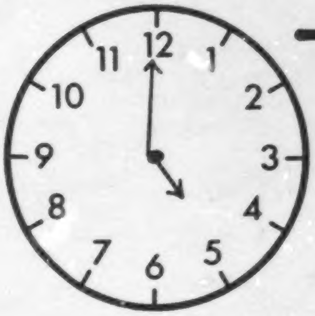
Follow the directions.



The long hand is the minute hand.

The short hand is the hour hand.

The hour hand is on the



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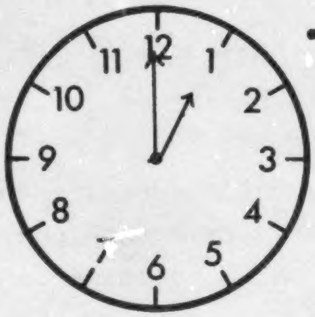

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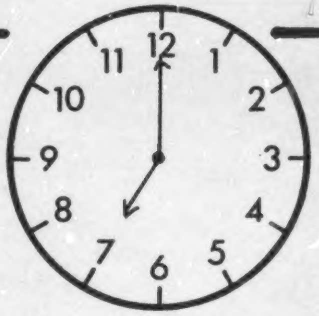


___

The minute hand is on the

___ ___ ___

complete each clock

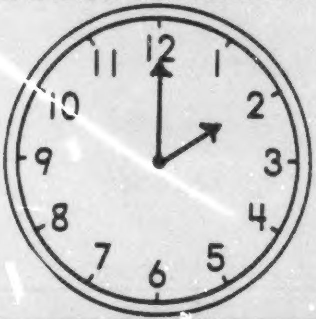
Put the hour hand on the 9.
Put the minute hand on the 12.

Put the hour hand on the 5.
Put the minute hand on the 12.

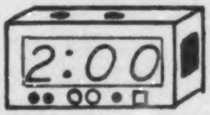
P.O. 1.10.11.02

NAME: ______________________ CLASS: __________ DATE: ________

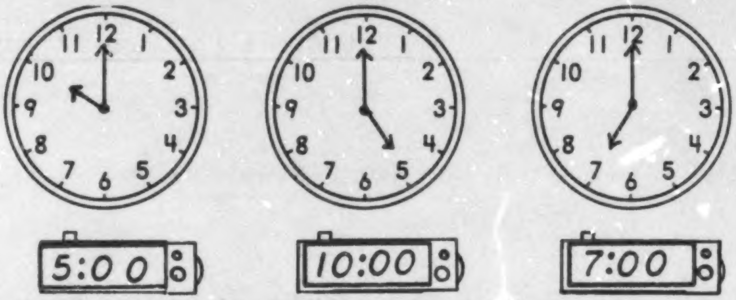
Follow the directions.



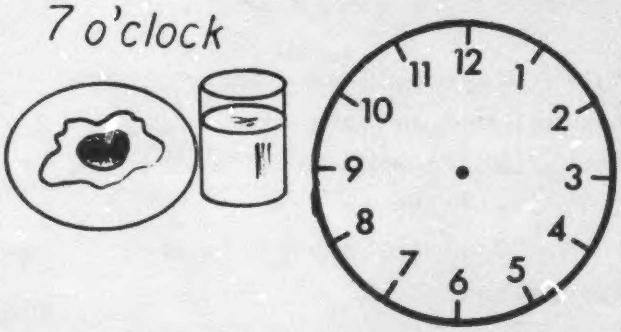
It is two o'clock.



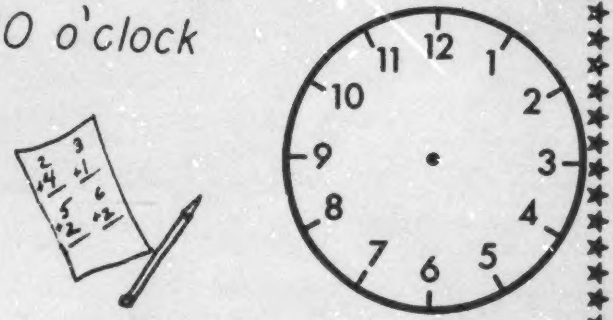
Match the clocks that show the same time.



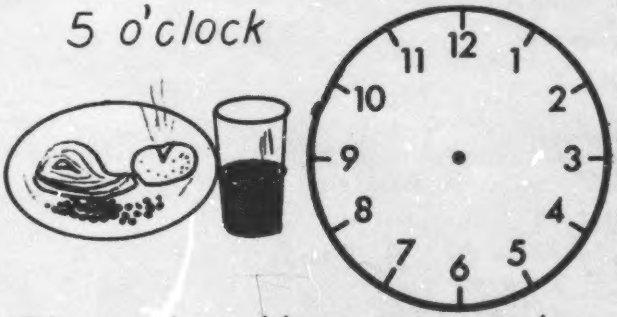
7 o'clock



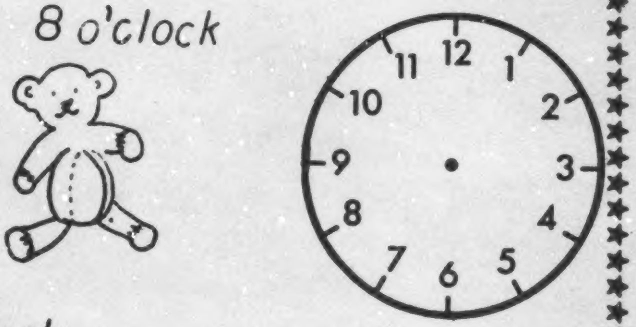
10 o'clock



5 o'clock



8 o'clock



Show the time on each clock.

1.13.04 SOLVE STORY PROBLEMS

(2 lessons)

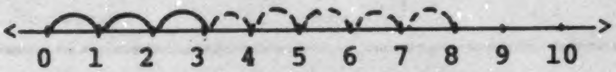
PERFORMANCE OBJECTIVES

The student will be able to...

*1.13.04.01A solve story problems through dramatization; e.g.,

The story of Chicken Little.

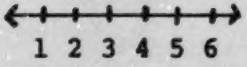
1.13.04.02B solve story problems using a number line. e.g.,



While playing 'Giant Steps', Sara was allowed to take three umbrella steps on her first turn and five jumps on her second turn. How many moves has Sara made altogether?

1.13.04

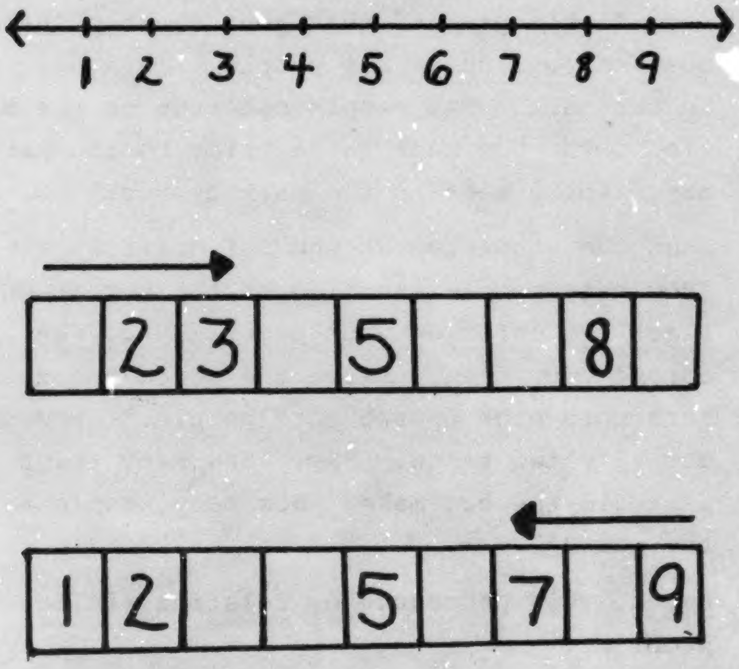
VOCABULARY

TERMS	SYMBOL
number line	

GETTING STARTED

Say, "Watch what I do. When I have finished, tell what I did." Dramatize actions, e.g., walk to the door, open the door, close the door, walk back to your desk. Ask students to verbalize your actions. Ask one student to dramatize an action and another to tell about that action.

Draw the following diagram on the chalkboard. Say, "Using the number line to help you, fill in the boxes counting forward. Fill in the boxes counting backward."



1.13.04

1.13.04.01 solve story problems through dramatization

STRATEGY 1: Say, "I will tell you a story and then we will act it out. Let's pretend that there is a bridge across the classroom." (Spanning the classroom's width.) Ask nine students to come to the front of the room. Say, "Three students can cross the bridge at one time. How many trips must be made so that all the students can cross the bridge?" Ask nine students to dramatize the story while the remaining students count the number of trips. Say, "How many students can cross the bridge at one time? How many students made the trip? How many trips did it take for all the students to cross the bridge?" Present similar situations for the students to dramatize.

STRATEGY 2: Prepare and distribute eight chips and paper to each student.

Say, "Let's pretend that your sheet of paper is a bus and your chips are people. This bus is going to the park. Two people can ride on the bus at one time. The bus made three trips to the park. How many people went to the park by bus?"

Lead the students through the dramatization. Say, "How many people can ride on the bus at one time? Place two chips on your paper. Move the paper across your desk, remove the chips and have the bus return to pick up two more people." Repeat this activity two times. Say, "How many trips to the park did the bus make? How many people are now at the park?"

Repeat this procedure by relating similar story problems.

1.13.04

1.13.04.02 **solve story problems using a number line**

STRATEGY 1: On the chalkboard draw a vertical number line, labeled 1 through 9. Say, "We will use our number line to help us solve this story problem. Herman the Frog was walking through the woods when suddenly he fell into a very deep hole. Herman looked up the side of the hole and saw that there were steps to the top. (Draw a picture on the chalkboard.) Each day Herman climbed up two steps, but at night when he was asleep, he slipped down one step. How many days will it take Herman to climb out of the hole?"

Ask students to retell the story. Say, "What do we want to find out? We will pretend that the number line is the hole. Each number is a step. Herman is at the bottom of the hole." Place a marker to represent Herman below the number line. Ask a student to keep a tally of the days it takes Herman to climb out of the hole. Say, "The first day Herman climbed up two steps. Where should we put the marker? At night Herman slipped down one step. Where is Herman now?" Record day 1.

Continue this procedure until Herman gets out of the hole. Count the number of days it took. (8 days) Reenact the story changing some of the facts.

STRATEGY 2: Prepare and distribute a number line and a sheet of paper for recording moves to each student. Say, "Every day a rabbit ate two carrots. How many days will it take the rabbit to eat eight carrots?" Ask several students to retell the story in their own words. Say, "Each number on the number line stands for one day. Let's move along the number line to see how many days it will take the rabbit to eat

STRATEGY 2:
cont'd

eight carrots." Record this chart on the chalkboard, using the demonstration number line and carrots to determine the answer to the story problem.

e.g.,

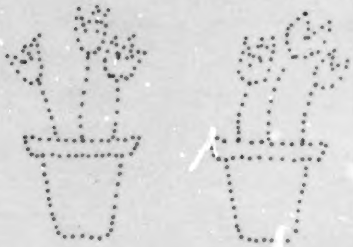
Day	Total Number of Carrots Eaten
Day 1	2 carrots
Day 2	4 carrots
Day 3	6 carrots
Day 4	8 carrots

Say, "How many days does it take the rabbit to eat eight carrots?" Continue this procedure using similar problems.

P.O. 1.13.04.01

NAME: ______________________ CLASS: __________ DATE: ________

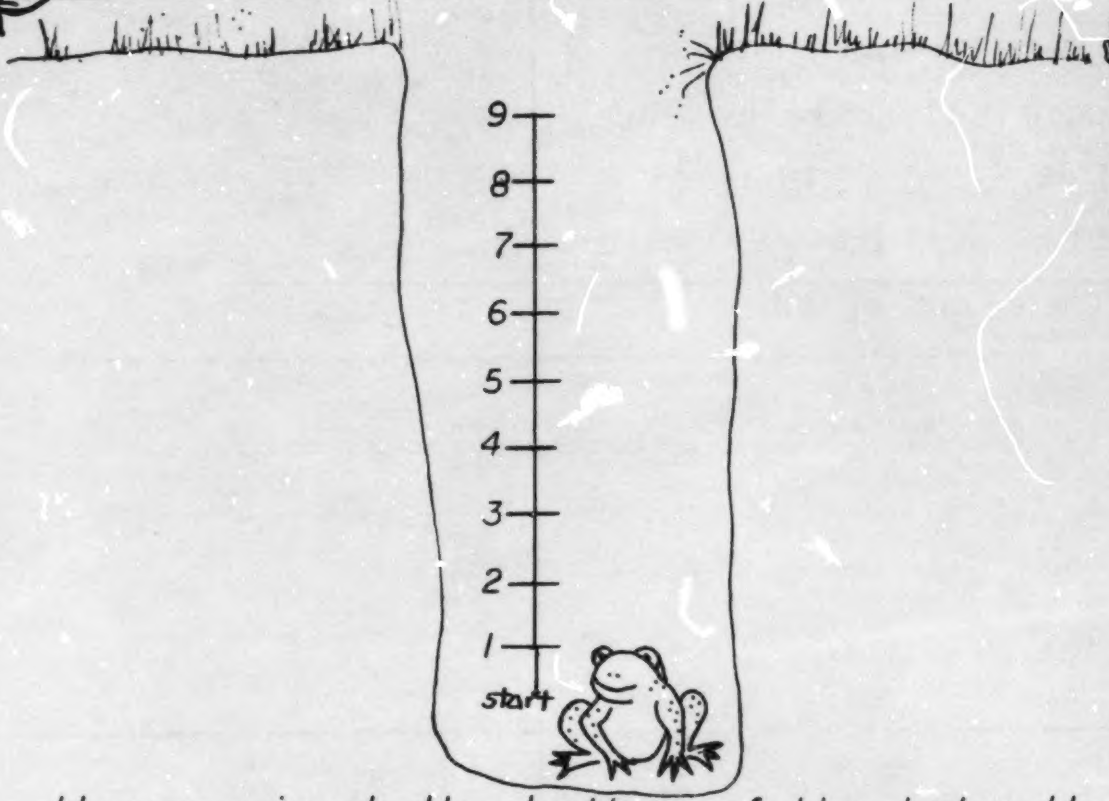
Draw pictures to solve each story problem.
Dramatize each problem.

Three flowers are in each pot. There are two pots. Draw pictures to show how many flowers there are in all.	
Four cars can fit on a ferry boat. How many cars can fit on two ferry boats?	
Each house has 2 windows. I counted 8 windows. How many houses are there?	
One tree has 4 apples on it. Another tree has 3 apples. How many apples are there altogether?	

P.O. 1.13.04.02

NAME:____________________ CLASS:________ DATE:________

Use the number line to help Herman get out of the hole.



Herman is at the bottom of the hole. He climbs 2 steps each day. He slips down 1 step each night. How many days will it take Herman to get out of the hole? ________ days

Herman is at the bottom of the hole. Each time he climbs, he goes up 4 steps and slips down 2 steps. How many climbs must Herman make to reach the top of the hole? ________ climbs

TABLE OF SYMBOLS

DEFINITIONS	SYMBOL	DEFINITIONS	SYMBOL
plus; add; positive	+	line	↔
minus; subtract; negative	-	ray	→
plus or minus	+ or -	perpendicular lines	⊥
times; multiply	· or X	parallel lines	∥
divide	÷	degree	°
divide	⟌	equals	=
square root	$\sqrt{}$	is not equal to	≠
cube root	$\sqrt[3]{}$	is less than	<
angle	∢	is greater than	>
between two numerals or letters at the end of a series or sequence; and so on	...	encloses a set when numbers are included: empty set when empty	{ }
		subset	⊂
triangle	△	intersection	∩
rectangle	▭	union; join	∪
parallelogram	▱	percent	%
circle	⊙	foot, minute	'
		inch, second	"
line segment (as $\overline{AB}$)	—		

METRIC TABLE

PREFIX	VALUE	LENGTH	CAPACITY	WEIGHT (MASS)
KILO	1000	kilometer* (km)	kiloliter (kl)	kilogram* (kg)
HECTO	100	hectometer (hm)	hectoliter (hl)	hectogram (hg)
DEKA	10	dekameter (dam)	dekaliter (dal)	dekagram (dag)
	1	meter* (m)	liter* (l)	gram* (g)
DECI	$\frac{1}{10}$ or .10	decimeter (dm)	deciliter (dl)	decigram (dg)
CENTI	$\frac{1}{100}$ or .01	centimeter* (cm)	centiliter (cl)	centigram (cg)
MILLI	$\frac{1}{1000}$ or .001	millimeter* (mm)	milliliter (ml)	milligram* (mg)

* most frequently used

BASIC CLASSROOM EQUIPMENT CHECKLIST

MATERIALS:

Abacus - Class size/individual. ____

Attribute blocks................ ____

Balance Beam.................... ____

Calculators..................... ____

Calendar - class size........... ____

Clock - large - class size...... ____

Clock - individual size......... ____

Clock - stamp................... ____

Coin stamps..................... ____

Compass......................... ____

Cubic counting blocks........... ____

Cuisenaire rods................. ____

Dominoes........................ ____

Felt cut-outs................... ____

Flannel board................... ____

Flash cards..................... ____

Fractional parts (assorted)..... ____

Geo boards...................... ____

Geometric patterns.............. ____

Hundred charts - class size/ind. ____

Laminating paper................ ____

Magnetic board.................. ____

Magnetic discs.................. ____

Measuring tools-English, Metric (rulers, scales, compasses, protractors, beakers, cups, spoons, thermometers)........ ____

Number lines - class/individual. ____

Numerals - tactile.............. ____

Plastic discs................... ____

Play money...................... ____

Powers of Ten................... ____

Protractor...................... ____

SEE calculators................. ____

Scale........................... ____

Screen (pull-down type)......... ____

Spinners........................ ____

Squared place value material.... ____

Standard playing cards.......... ____

Tangrams........................ ____

Tens frame...................... ____

Timers (1,2,3 minute)........... ____

Tokens (various sizes/colors)... ____

Trundle wheel................... ____

Unifix cubes.................... ____

Unifix 100 board................ ____

SUPPLIES:

Adding machine tapes (for classroom/ind. number lines)...... ____

Chalk........................... ____

Construction paper.............. ____

Elastic bands................... ____

BASIC CLASSROOM EQUIPMENT CHECKLIST

SUPPLIES: cont'd

Envelopes (all sizes).......... ____

Erasers, board/individual...... ____

Felt pens (all sizes).......... ____

Ditto, Rexograph paper......... ____

Glue........................... ____

Gram weights................... ____

Graph paper (1 cm, <, 1")...... ____

Grease pencils................. ____

Oak tag........................ ____

Paper clips.................... ____

Paste.......................... ____

Plastic discs.................. ____

Pointer........................ ____

Primary pencils................ ____

Rubber bands................... ____

Scissors - primary, left hand.. ____

Scotch tape.................... ____

Spinner........................ ____

String......................... ____

Tape........................... ____

COLLECTIBLES:

Beads and beans................ ____

Bottle caps.................... ____

Buttons........................ ____

Cardboard (all sizes).......... ____

Cereal boxes................... ____

Coffee cans.................... ____

Detergent boxes, shoe boxes,
meat trays, and plastic
containers..................... ____

Egg cartons.................... ____

Felt for desk mats............. ____

Ice cream sticks............... ____

Juice containers............... ____

Macaroni....................... ____

Magazines...................... ____

Menus.......................... ____

Metrically measured cartons.... ____

Milk containers................ ____

Newspapers..................... ____

Paper plates................... ____

Sand........................... ____

Spools......................... ____

String, yarn................... ____

Styrofoam...................... ____

Tongue depressors.............. ____

Wire hangers................... ____

Ziploc Bags.................... ____